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Little Albatros
Aero L-39
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**SCALE
PLANS**
INSIDE

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The Nanchang Fantan

by Graham Napper

The export A-5C Fantan seems a 'nice little earner' for the People's Republic of China

The June 1986 issue of *Scale Models* carried a useful article on converting KP's MiG-19 kit into its radical Chinese development, the Nanchang A-5 Fantan-A attack aircraft. Progressive upgrading has brought the Fantan up to A-5C standard, an example of which was displayed at the Paris Air Show by the China National Aero-Technology Import and Export Corporation (CATIC). I therefore seized on this opportunity to provide a detailed reference of this improved jet, parts of which (undercarriage, etc) are still applicable to the MiG-19 from which it originated.

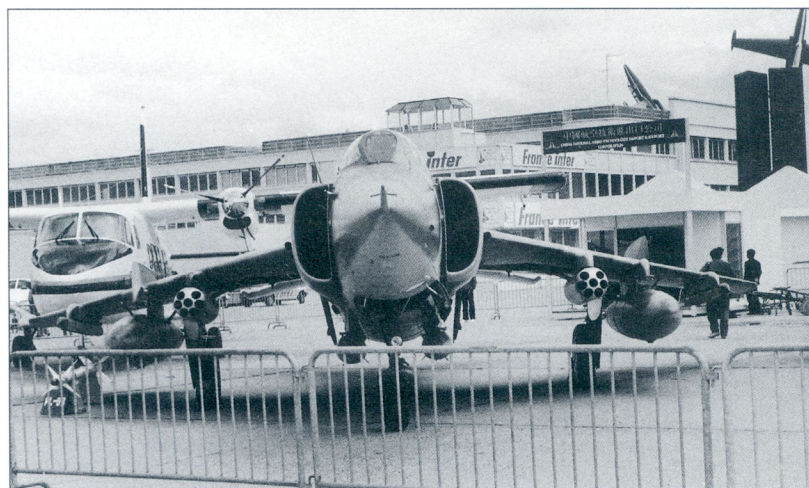
Much confusion has reigned over the designation of this ingenious extrapolation ever since the West caught sight of it in the late seventies; development must have been decidedly low-key as the initial flight took place as long ago as June 1965! Originally, and erroneously, described as the F-9 by Western sources, the designation was changed to F-6bis when its relationship to the Shenyang F-6 (MiG-19 copy) was established, until the true title of Q-5 was revealed to a group of industrialists visiting China's Nanchang factory, where production was under way. Q stands for Qiang which translates as Attack, hence the export label of A-5.

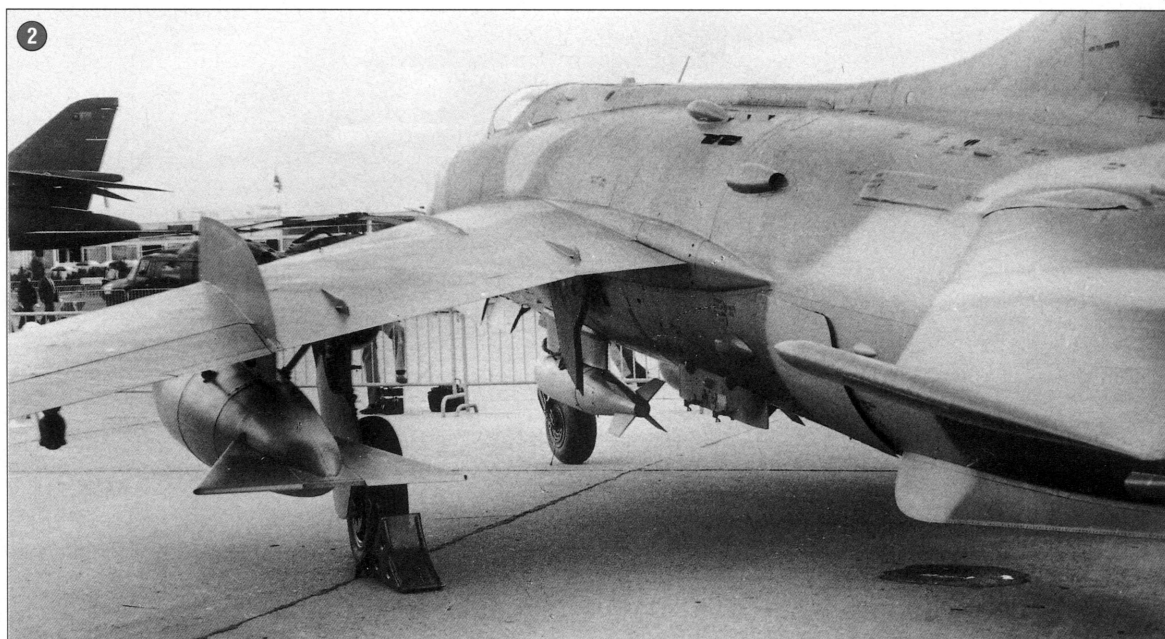
Four variants of this supersonic light bomber have been acknowledged: A-5I; A-5II; A-5III and A-5M, with North Korea and Pakistan as the sole customers thus far, outside China. Pakistan operates 42 A-5IIs with a further batch of 110 A-5IIIs in the pipeline, the latter incorporating Martin-Baker PkD10 zero-zero ejection seats. Powered by two 7,165lbst (3250kgp)

reheated Wopen-6 turbojets (modified from the Tumansky RD-9B) the A-5III was the first export model, which was subsequently replaced by the A-5M which had avionics and nav/attack systems developed by Aeritalia, plus the installation of the 8,267lbst (3750kgp) Wopen-6A engine.

The type on show at Paris was an A-5C (otherwise known as A-5III) and differs externally from the earlier Fantans by virtue of a braking parachute bullet housed at the base of the rudder, a long IFF blade aerial under the nose in place of the three-pronged 'odd-rods' system, two extra wing pylons and two

With a solid nose and side intakes it is hard to believe that Fantan began as the MiG-19 Farmer

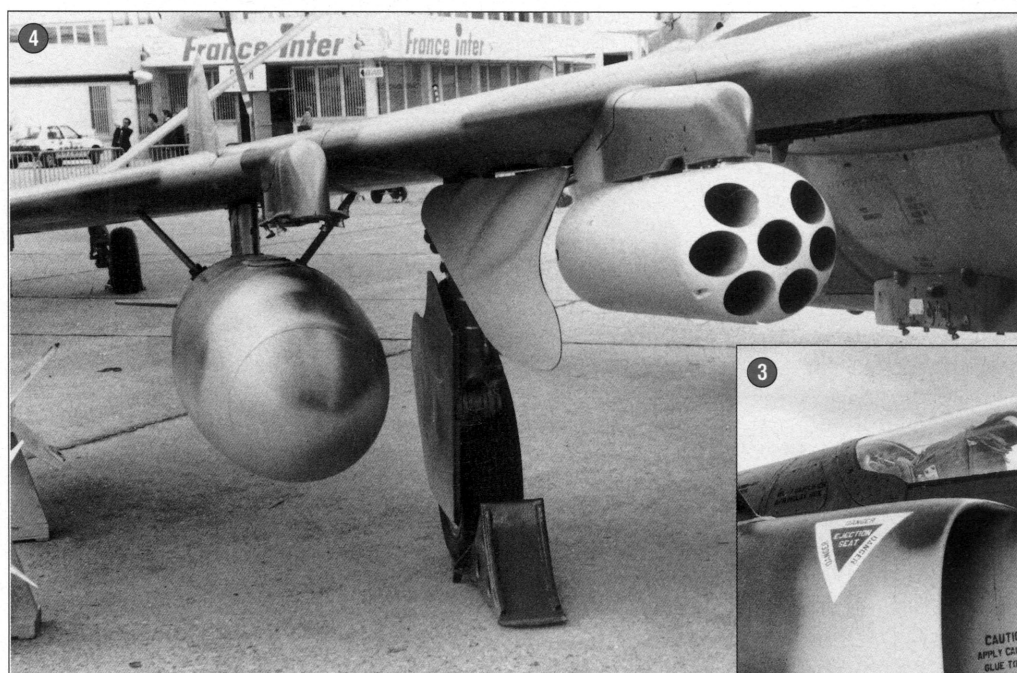




1. Two 'pen nib' fairings, each housing a small hole, shape the fuselage rear. Above is the bullet-shaped braking parachute container which replaces the MiG-19's ventral stowage

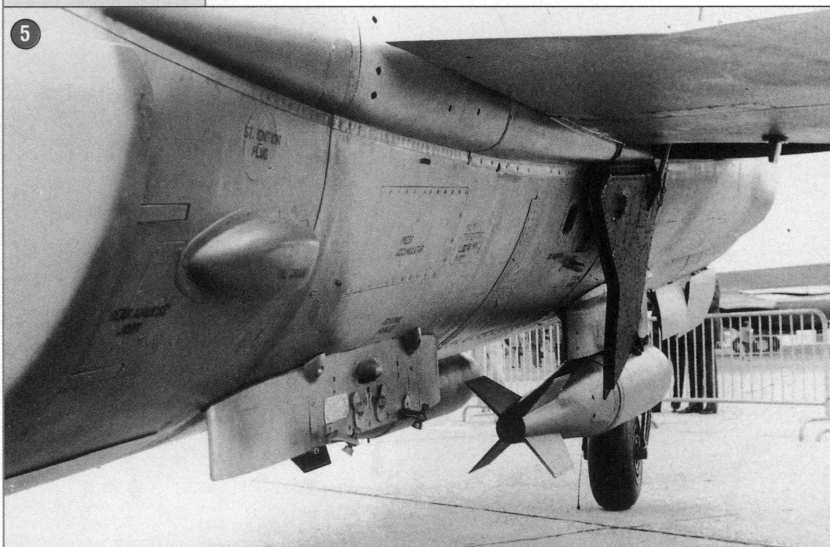
2. Several small intakes remain from the Fantan's predecessor, like those above the wing

3. A rear-hinged canopy is used by Fantan instead of the sliding variety of Farmer. There is no rescue arrow on this side intake, although both sides have danger triangles



4. Close-up of the two inner wing pylons shows that fuel tanks, when carried, use a further station almost in line with the weapons point and assisted by two bracing struts





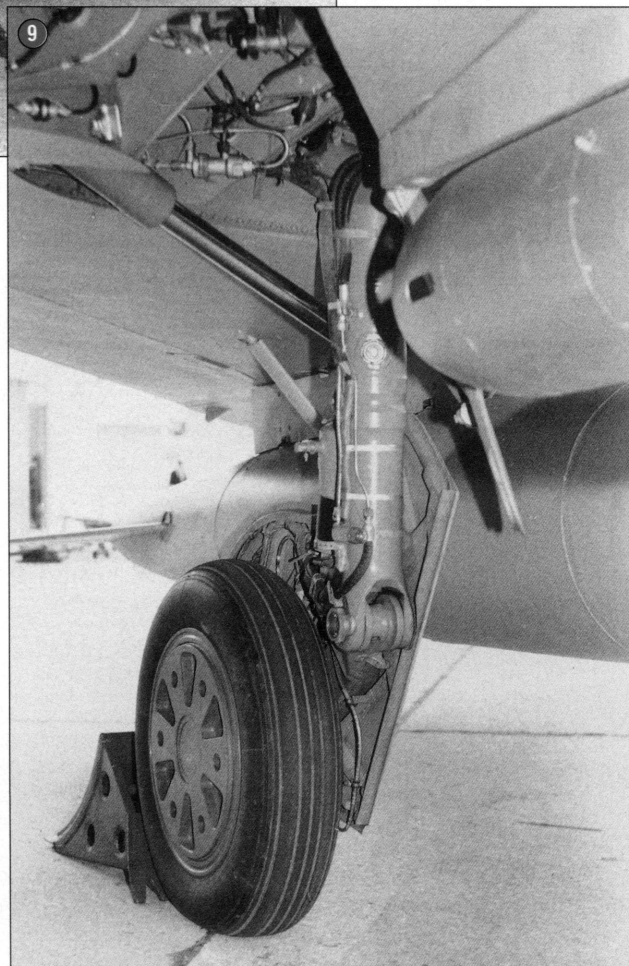
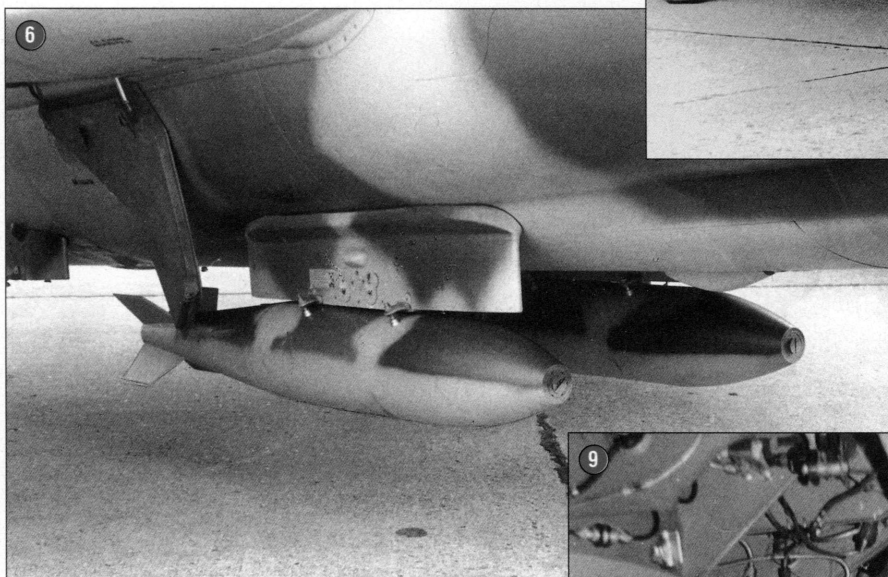
5. Looking from starboard rear. Fuselage pylons are carried in two pairs

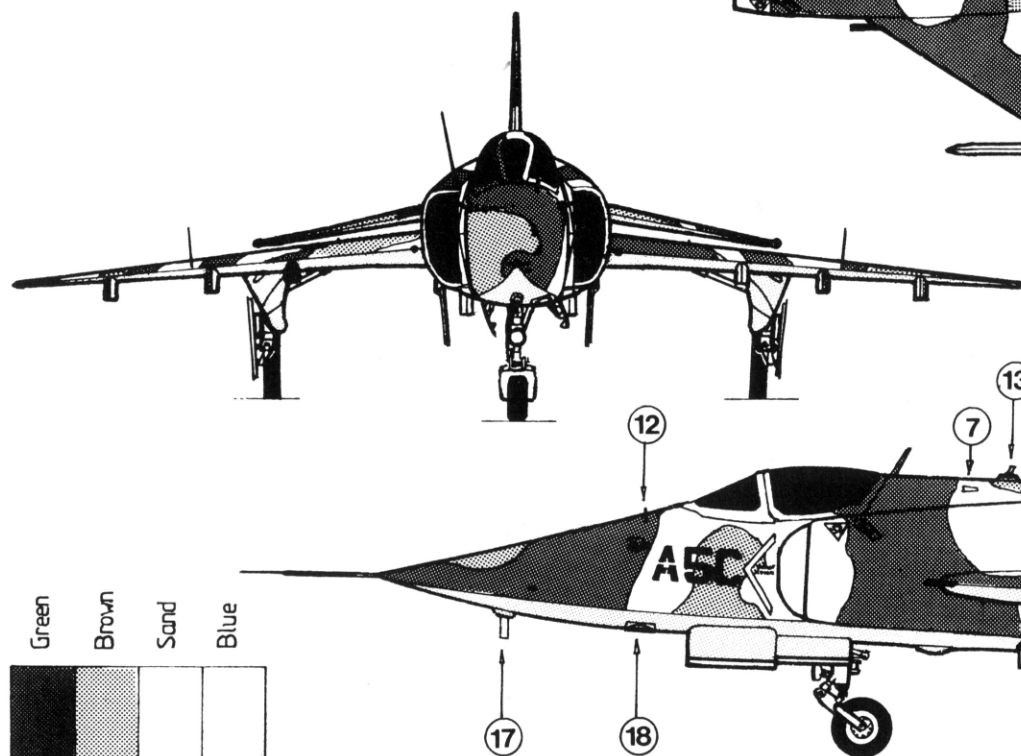
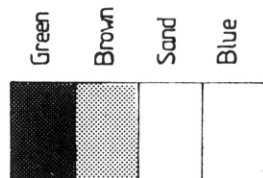
6. Front weapons stations carry up to 250kg bombs; these American types are sprayed to match the camouflage scheme

7. Nosewheel has the only instructional stencilling to be worded in Chinese, all the rest are in English

8. Nosewheel undercarriage bay with its two sets of doors set at different angles

9. Port main wheel leg showing the retraction strut that pulls the undercarriage inwards

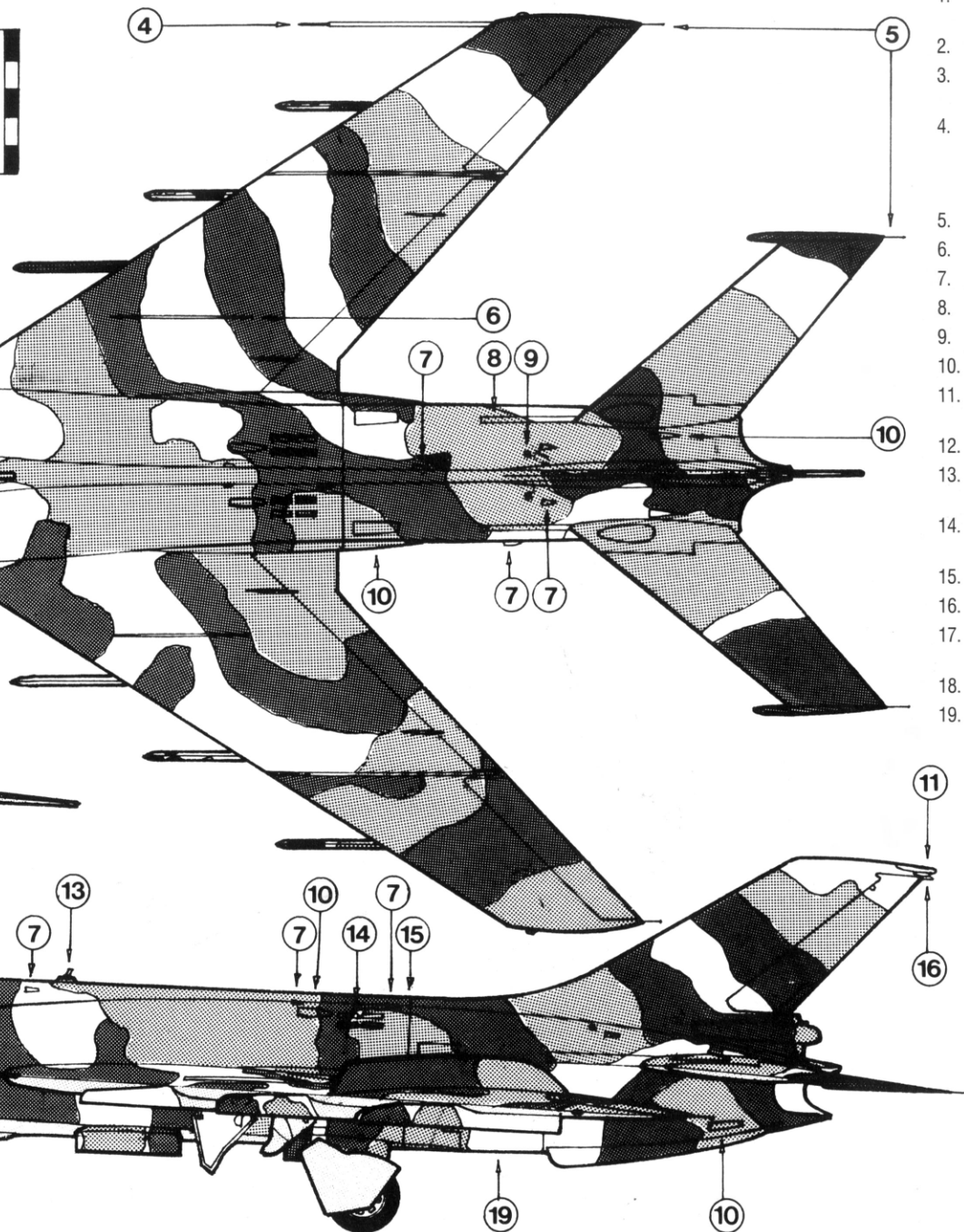




Key to Plans

1. Pilot tube sensor vanes (painted red)
2. Sensors (bare metal)
3. VHF aerial (standard fit for all versions)
4. Probe. Fitted to aircraft in Chinese service (possibly only development versions)
5. Static discharges
6. Strengthening rib
7. Aircoop
8. Strengthening strip
9. Louvres
10. Air intake (both sides)
11. Tail warning antenna fairing
12. Rod indicator
13. Aerial (optional, depending on avionics fit)
14. Slot intakes (shown open, these are closed in flight)
15. Fuselage break point
16. Rear navigation light
17. Aerial (replaces "odd-rods" IFF)
18. Retractable landing light
19. Air brake

1/72nd scale



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extra fuselage pylons to replace the internal weapons bay. This space is now permanently used for fuel. Up to two tons of weaponry can be slung beneath two pylons – four under the fuselage – and four self-defence Matra R-550 Magic, AIM-9 Sidewinder or China's own PL-5 close-range air-to-air missiles can be carried on outer wing pylons, backed up by two 23mm wing mounted cannon.

As explained in Boyd Fitch's conversion, the A-5 is longer, taller and wider than the F-6, carries much increased payload and at \$1.5m a copy (including full technical support) is only about half the cost of a Hawk trainer! On the debit side, mean time between overhaul of the Wopen-6 is only 200 hours, up from 100 hours applicable seven years ago. To gain access to the engines the Fantan's fuselage is removed at a point aft of the wing trailing edge, just like its forebear. Height is purported to be 14 feet 10 inches (4.516m) according to the publicity hand-out, but this figure cannot be reconciled with photographs of the actual aircraft, therefore the accompanying plans show an estimated 13 feet (3.96m). Other dimensions are as quoted by CATIC.

The example presented to an inquisitive public in Paris was colourfully finished in sand, green, brown upper surface camouflage, and medium blue beneath. This appears to be one scheme applied to current People's Liberation Army Air Force Fantans and matches the following Humbrol paints, respectively HC5 (Mast Oak) [Use Humbrol 71]; Matt 30 (Green); HB2 (Dark Earth) [Use Humbrol 29]; HG13 (Himmelblau) [Use Xtracolor X214 or LifeColor UA062]. Wheel hubs are in HR106 (Malachite Green) [Use Xtracolor X628], undercarriage legs HU22 (ANA603), wheelbays MC20 (Grey) [No current equivalent], cockpit is probably turquoise with black instrument panel, HUD and control column.

Pakistan Air Force A-5s sport a similar four-colour camouflage pattern, but with apparently darker upper surface hues.

Photographs show a more reddish brown and sand. Owing to the avionics fitted, these aircraft have one or two aerials that are lacking on the Paris airframe, and the nose pilot has red and white striping rather than a continuation of the camouflage. Pakistani markings intended for that country's MiG-19 can be obtained from Microscale sheet 72-102, the same sheet also offering decals for Chinese aircraft. CATIC's A-5C demonstrator bore no national insignia, only the legend 'A-5C' in black in front

of each engine intake. Red warning chevrons, red and white ejection seat danger triangles and a yellow 'Rescue' arrow on the port intake trunking were the other main items. Stencilling appeared in black except by the intakes where red was deemed more suitable.

Although it can hardly be said to represent the ultimate in aviation technology, Fantan retains a certain rustic charm that in no way degrades its performance for the close air support/battlefield interdiction role. Modern ordnance such as the BL755 Cluster Bomb and Durandal runway penetrator can be carried, as well as rocket pods, conventional and retarded bombs. Fantan represents a great leap forward on China's long march towards modernity and provides an intriguing model for the enthusiast. **MAM**

The A-5's wing is basically the same as on the earlier F-6, but minus underwing spoilers and with an increased span and altered flaps



The peculiar offset nose wheel doors are well illustrated in this shot



10. Air-to-air missiles, like this Chinese manufactured PL-5B, need an additional launch rail fitted to the outer wing pylons as here

11. The selection of weaponry on display with the Fantan included this 750lb bomb on its loading trolley



Falkland File

1. XV420, 'B' takes the RHAG (Runway Hydraulic Arrestor Gear) on landing. The RHAG was always used by the Phantoms even with a runway some 6000 feet in length



2. XV420, 'B' returns along the runway. Note the shadow shaded tail markings, which appeared on both sides of the fin rendered in a full colour, fine art form unlike the remainder of the squadron. The Falkland Islands shields on the nose also got the fine art treatment. Close-up photographs of these markings can be found in the book, 'Phantom Squadrons of the RAF and FAA' by R L Ward, albeit in black and white

3. XV423, 'D' returns to the flight line

FALKLAND ISLANDS JULY-NOVEMBER 1985
F-4M PHANTOM FGR.2, NO. 23 SQUADRON,
RAF STANLEY

By T. Ross



4. XV426, 'F' taxis out for a patrol. Note the full weapons load of four Sidewinders, four Skyflash and a SUU-23/A cannon pod. The individual letter F is repeated on the nose-wheel door

5. XV402, 'A' on QRA (Quick Reaction Alert). The aircraft is hooked up to a power set and battery accumulator trolley, ready to go if scrambled



6. XV402, 'A', head-on view with portable Rubb-hangers behind



7. XV402, 'A'. A close-up of the 'zap' applied under the nose markings. 'I slept at 1312' alluding to No. 1312 Flight also resident at RAF Stanley. Note also the worn appearance of the aircraft markings and the prominent unpainted screws. Salt air corrosion would take its toll on unpainted metal especially if the panels were being removed as a regular occurrence. The two yellow triangles on the cheek intakes denote the current state of weapons modifications implemented, three being the maximum. Between the glazing of the pilot's and navigator's cockpit is a periscope telescope linked to the radar and used to identify contacts with its large magnification



8. XV402, 'A'. Starboard view showing the Dark Sea Grey over Light Aircraft Grey fuel tank fitted on this side with a replacement nose. The worn appearance on the tank aft of the new nose is due to its use as a step for getting on/off the aircraft. Other Phantoms on No. 23 Squadron at the time were XV495 'C' and XV466 'E'.



Hercules C.1K, No. 1312 Flight, RAF Stanley

9-1 XV203 a C.1K tanker also fitted with electronic surveillance equipment in wing tip pods

10-2 XV204, another C.1K tanker and

Chinook HC.1, No. 1310 Flight, Kelly's Garden

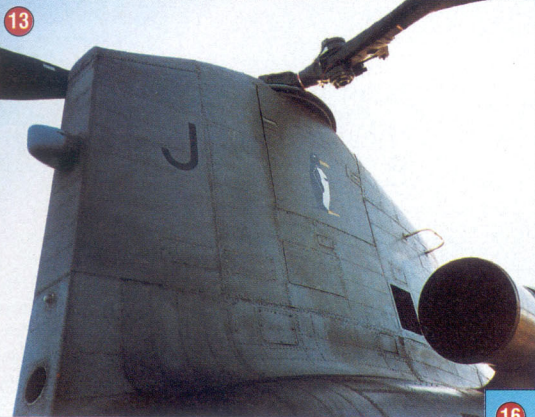
11-1 ZA684, 'F' at rest on the pierced steel planking at Kelly's Garden. The discolouration behind the engine is the dried remains of the engine compressor wash fluid

12-2 ZA680, 'J' showing the four star markings applied when the 'cab' was used to ferry a high-ranking officer visiting the Islands. Note the colour of the RWR (Radar Warning Receiver) cover protruding from the nose and the Nightsun searchlight fitted beneath



13-3 ZA680, 'J' again showing a light blue RWR cover and the penguin tail markings

14-4 ZA709, 'A' with a dusting of snow and tied down against the elements. This is how most people perceive the Falkland Islands
NOTE: The fourth Chinook on No. 1310 flight at the time was ZA715.



Miscellaneous at Kelly's Garden

15-1 Gazelle AH.1,
ZB675, Garrison Air
Squadron, Army Air
Corps

16-2 Scout AH.1,
XT632, Garrison Air
Squadron, Army Air
Corps

17-3 Lynx HAS.2
XZ725, '320-AZ'
'Grace', No. 815 NAS,
HMS Amazon

18-4 Sea King HAS.5,
XV652, '532', No. 826
NAS. XV655, '534'
also visited

19-5 Sea King HAR.3,
XZ592, 'S', No. 1564
Flight from Navy Point,
Stanley.

NOTE: The second
Sea King on No. 1564
Flt was ZA105, 'S-D'



1. Entry door revealing fully retracted ventral gun position. Located on the aft fuselage are the ASV Mk II aerials (transmitting and receiving) of British design and manufacturer

2. An entry door fitted with the jettisonable dinghy release housing

3. Partially retracted ventral gun position

4. Ventral gun position and retracting mechanism in its raw state. Note it is not centrally located and has ventral windows. Entry door to the right

5. Hudson rear fuselage showing fully retracted ventral gun position with the magazine, ammunition feed, 0.303in Vickers on gun mount, gunner's mattress, 'seat' belt and retracting /extending chainwheel. Note also the window 'curtains', flare rack, intercom headset and turret base at rear. The ventral gun was optional on the Mk I but standard on the Mk II

6. Starboard fuselage looking aft and showing the parachute rack, flare stowage racks and emergency exit door

7. View forward to crew compartment door with its document holder. The flush fitting metal roof hatch is in position, so the navigator's astrodome (left) and astrodome support (right) are both folded down against the side

8. View forward on port side. Astrodome in retracted position and the folding canvas bunk is in the lowered position. The tan-coloured hanging object is a USN life preserver

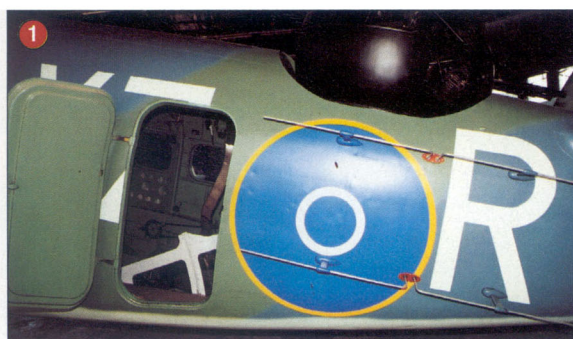
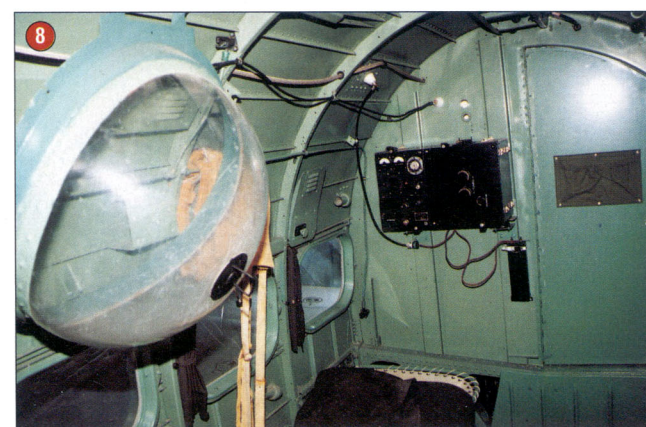
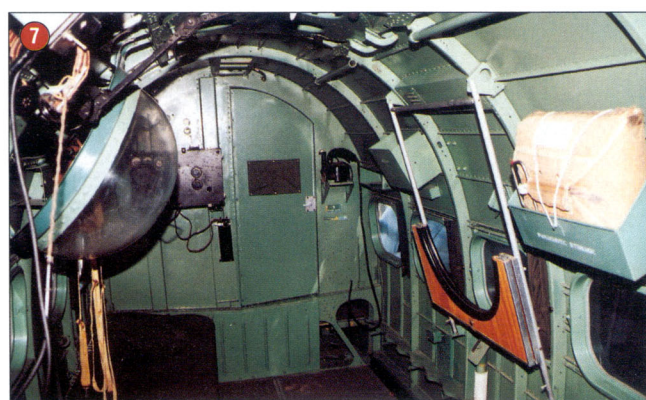
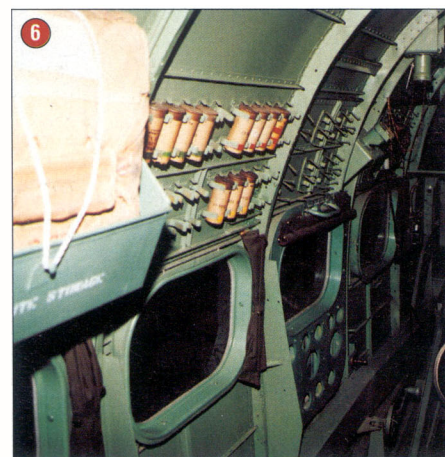
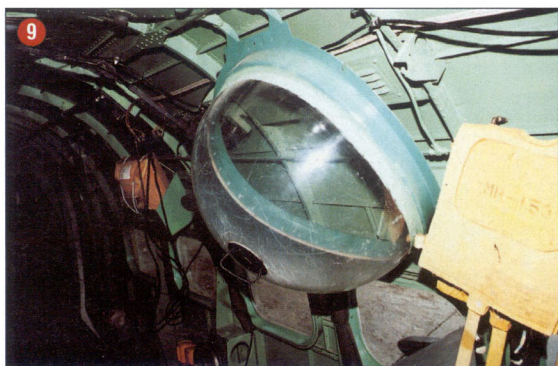


Photo Album

LOCKHEED HUDSON

by David Frowen

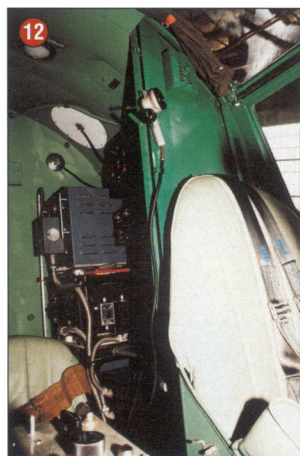
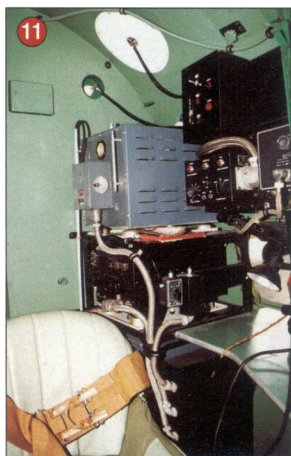




9. Port side looking to the rear. Note additional parachute stowage bin

10. Wireless operator's seat with the main wing spar and open cockpit door to the rear

11. Wireless operator's position on the port side, immediately behind the pilot's seat. Bendix equipment is evident here, but RNZAF Hudsons used a variety of British, Australian and American manufactured communications equipment.



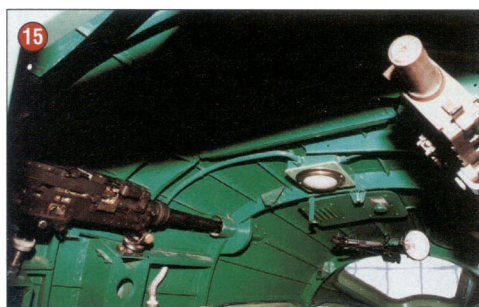
12. Pilot's seat in front of wireless operator's position. Note folded roof blind



13. View from the cockpit door looking forward, with wireless operator's position on the left, pilot ahead and navigator's table through the access tunnel in the nose



14. Pilot's instrument panel. Note the bungee cords and handles on the adjustable quarterlight windows and the seat's folded arm rests



15. Roof of navigator's position in the nose, with pilot's fixed 0.303in Browning machine guns. These were aimed by a ring and bead sight. The bead was mounted on a short pole forward of the windscreens while the ring folded down from the cockpit roof when required.

Note the navigator's folding light and the rather bright green used throughout this machine



16. General view forward into the nose showing the navigator/bomb aimer's position. In view are the navigator's compass, map, instrument desk that slides on rails, multi-pose light, drift sight and map holder



17. The navigator's sliding seat (uncovered)



18. Navigator's position showing seat with seat belt, instrument panel (clock, altimeter, airspeed indicator and air temperature gauge), calculator, radio compass, desk and window

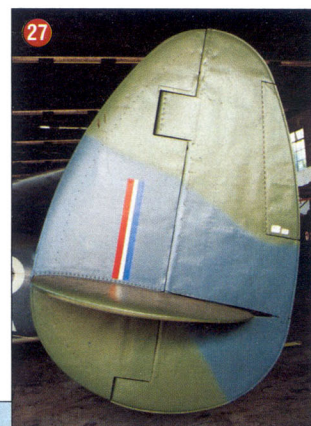
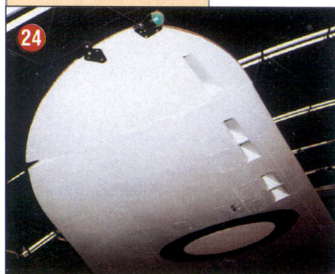
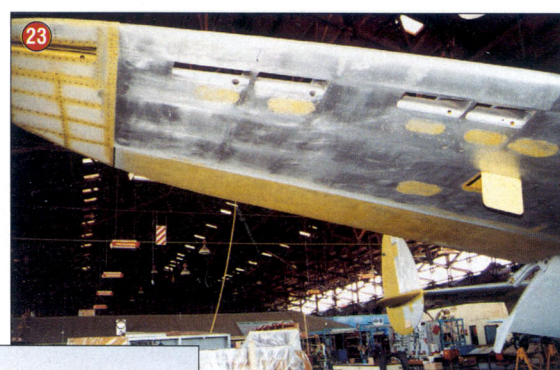
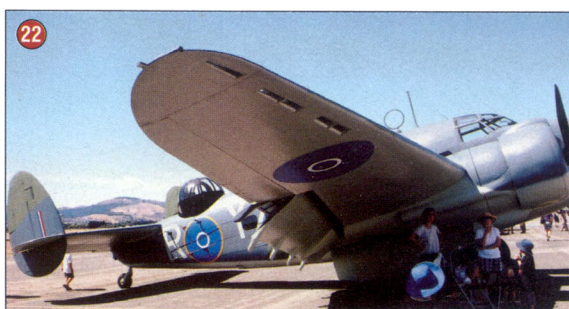
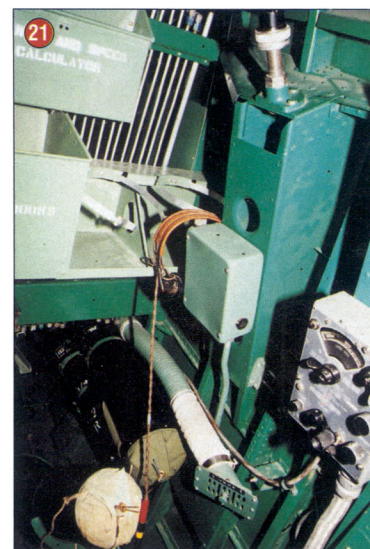
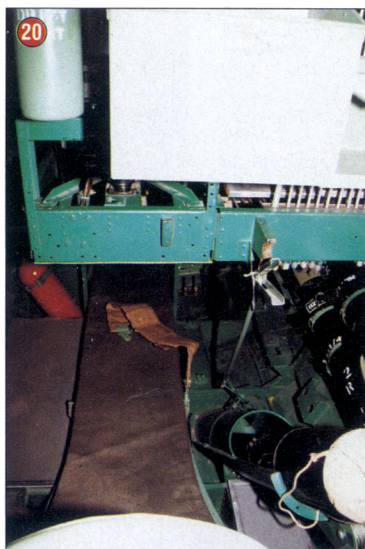
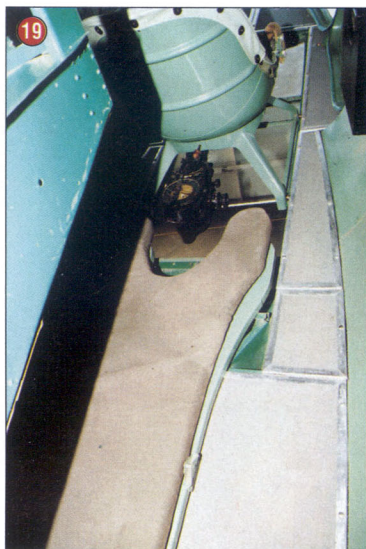
19. Bomb aimer's prone position on mattress. His feet extend below the pilot's position. The gunsight is visible above the flat ventral glass panel. The navigator's sliding seat is positioned above

20 & 21. Two views rearwards from the navigator's seat to the pilot's position.

22. Lockheed Hudson Mk III, NZ2013 marked as YZ•R of No.4 Squadron and seen in February 1988

23. Fixed leading edge slots. Though Hudsons were received with leading edge de-icing boots they were later removed as unnecessary for New Zealand and Pacific operations

24. Starboard navigation light on an RAAF Hudson



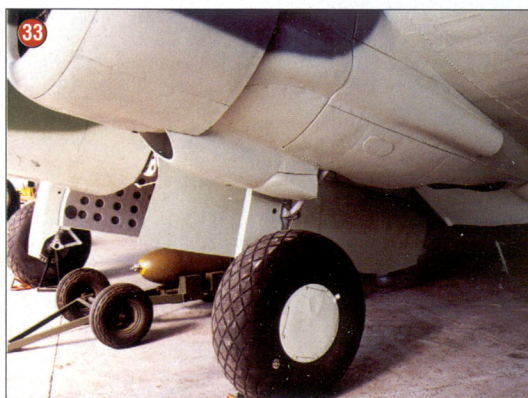
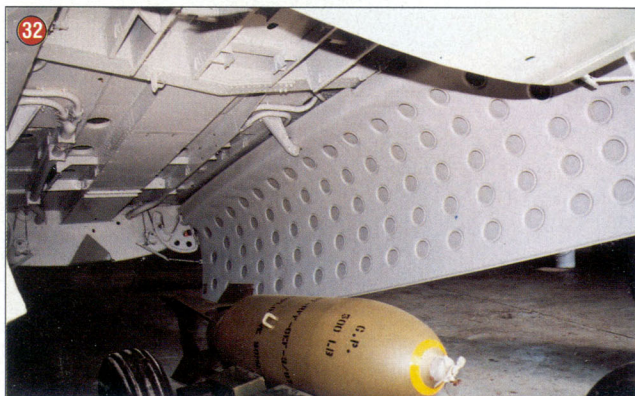
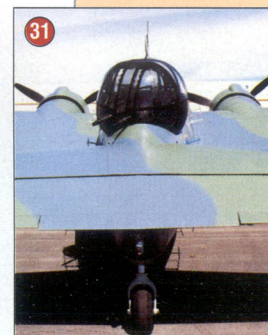
25. Two views of the Hudson's nose. Note the tube over the pilot's machine gun and the different shapes of the nose windows

26. Underside of the nose showing the flat bomb aimer's window, forward flare tube outlet, pilot head, red/green/orange recognition lights and bomb bay doors

27. Port tailfin showing its exact shape

27A & 28. Overall views of the tailplane





29. The tailwheel

30 & 31. Boulton Paul hydraulic turret finished in the standard Gloss Black.

32. Bomb bay, bomb doors and a 500lb GP bomb

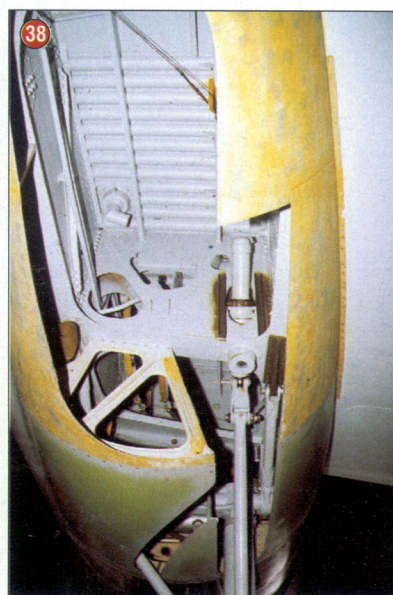
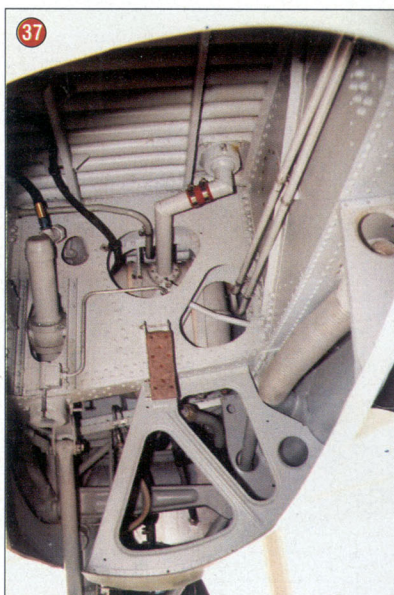
33-36. Details of the port undercarriage leg

37. Starboard wheel well looking forward. The exhaust outlet is on the right, while the undercarriage leg is to the left



38. Port wheel well looking forward. Two bracing struts and the main oleo is evident

39. Rear section of the port wheel well

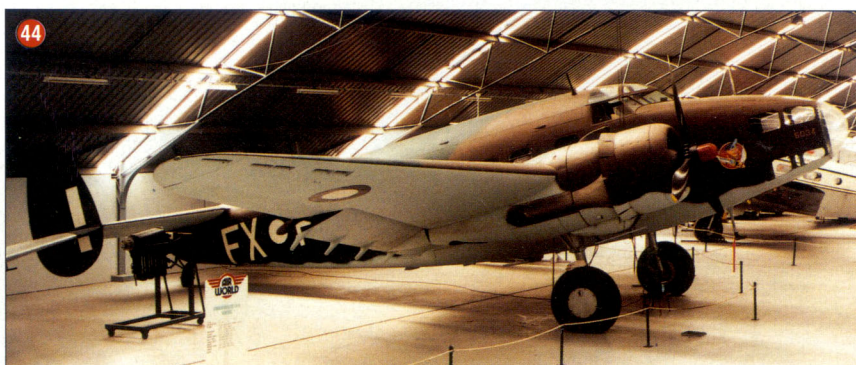
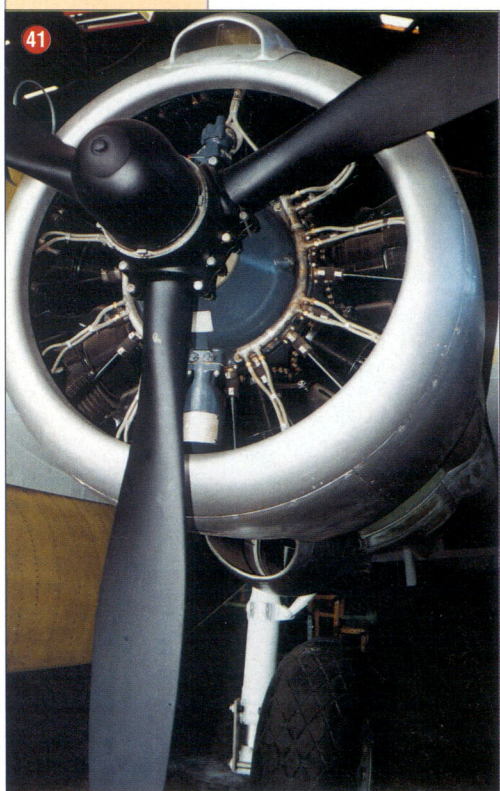
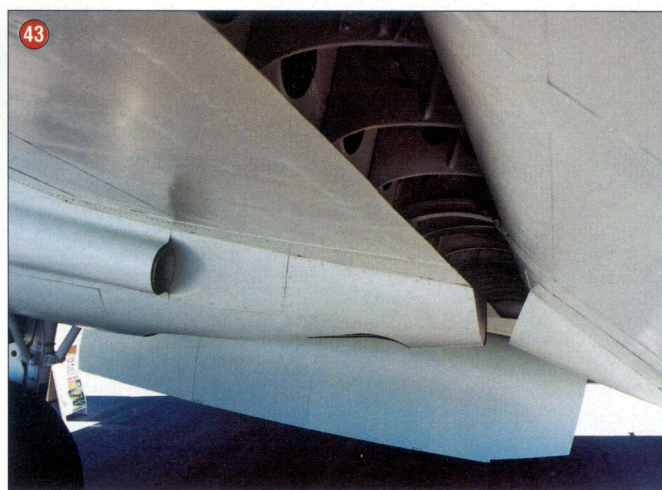
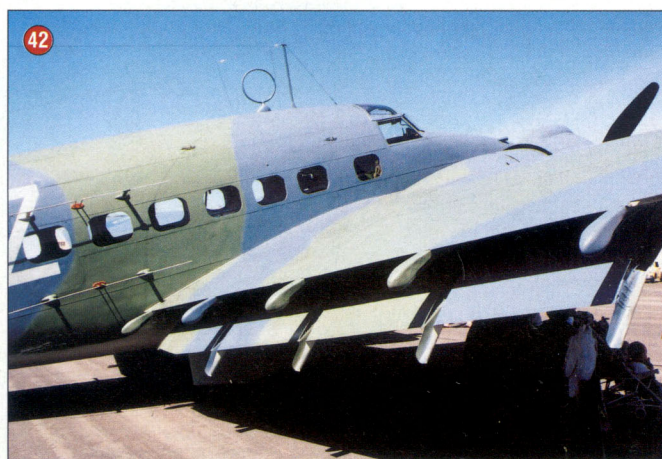


40 & 41. Hudson Mk III 1,200hp Wright Cyclone nine-cylinder single-row radial fitted with a constant-speed Hamilton-Standard propeller. The Hudson Mk I engines were lower powered at 1,100hp and had a two-position Hamilton-Standard propeller

42. Fowler type flaps. Note they are trimmed on the inside corner to stop contact with the ground

43. Inner view of the Fowler flaps

44-46. Hudson Mk IV, ex-RAAF in No.6 Squadron markings at Wangaratta Air World, Australia. This museum also has an immaculate Mk III Hudson. Both were airworthy in the 1990s and I believe that one is now with the Australian War Memorial while the other is airworthy and to full military specification



Bébé

ASPECTS OF THE NIEUPORT 11

By Harry Woodman

P1: A Nieuport XI of the RNAS at Dunkerque in 1916 illustrates the sprayed camouflage finish applied to some Nie.XIs. This early scheme omitted cockades on the upper wing surfaces. The spare Lewis magazines held in the rack were not typical but the stripped Lewis mounted on the French Moreau mount was.

The larger No.5 magazine with 97 rounds is fitted here. The aircraft is being restrained by the ground crew whilst the 80hp Le Rhône is being warmed up, and one can almost smell the burnt castor oil.

Inextricably associated with the appalling extended battle of Verdun in 1916 the Nieuport type XI along with its extension, the type XVI, is perhaps the archetypal WW1 single-seat fighter aircraft (or *Chasseur* as the French would have it).

During the earlier years of the war there were no single-seat fighter squadrons as such, units consisted of various types and scouts such as the Morane-Saulnier and Nieuport type X (single-seat version) which were part of a mixed unit. By the spring of 1916 the pressures on Verdun led to a rethink, as large numbers of fighting aircraft were required to defend the air over Verdun and to combat the substantial number of German aircraft involved. It was *Commandant the maquis de Rode* who organised and commanded briefly the groups of Nieuports. Many distinguished French pilots were blooded flying the type XI and XVI over Verdun; they included Guynemer, Brocard, Deullin, Chaput and Navarre. The Nieuport also contributed to



P2: Although there are several replicas, the only surviving Nieuport XI is displayed at the MAE at Le Bourget. This photo was taken at the old establishment at Chalais Meudon in the 1960s when it was adorned with the serial N.976. It subsequently underwent a restoration and is now displayed with the serial N.556 to represent the aircraft flown by *Commandant Baron Jean-Baptiste Charles de Tricornet maquis de Rose*. He commanded the air defence of Verdun but unfortunately died in an accident on May 11th 1916. The Nie.XI at Le Bourget now sports a rose on the fuselage flanks and the edges of the wings, horizontal tail assembly and fuselage are sealed with dark blue-grey tape.



the demise of the Fokker and Pfalz monoplanes which had caused such havoc for the Bébé was agile and could literally fly rings around the Fokkers. The Nieuport so impressed the Germans that they had sets of drawings made from captured examples and sent them to three German manufacturers with a view to copying, surely the sincerest form of flattery. Two firms, Siemens-Schuckert and Euler tried but only the SSW product saw limited service. Albatros, the third company, did emulate the narrow lower wing for greater visibility but also inherited a built-in weakness. The success of the Nieuports at Verdun in destroying German kite balloons with Le Prieur rockets led the Germans to emulate these weapons and technique on a limited experimental scale.

The RNAS, perhaps adopting a more adventurous spirit than the RFC, had already purchased the Nieuport type X and was the first British service to buy and employ the type XI in France and in the Aegean, receiving the first examples towards the end of 1915.

The Russian Air Service, customers of the Nieuport firm since long before the war, obtained a few type XIs and then built a number under licence, the large Duks firm of Moscow being the main builder. They introduced few changes, the most noticeable being the addition of a headrest which the French copied on the type XVI.

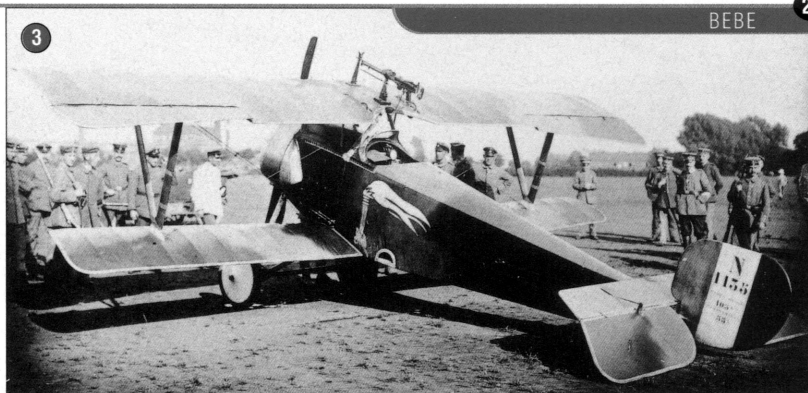
On entering the war in 1915 Italy found its first fighter aircraft in the form of the Nieuport XI, a few being purchased from France and eventually the type being produced in numbers under licence mainly by the Macchi Company of Varese. The Belgian service also employed the Nieuport and the Americans will always associate the Type XI and the XVI with the *Escadrille Americaine* (subsequently *Escadrille Lafayette*).

Nomenclature

The origins of the official designations of some French aircraft are complicated but briefly the little Nieuport was originally designated Nieuport type BB = XI. This might explain the appellation Bébé (a name by which later Nieuports also became known). However, it is more likely the fact that the new machine was seen as a baby version of the larger type X in rather the same way that the Sopwith Scout became known as the Pup, the 'progenitor' being the larger Sopwith 1 1/2 Strutter. The use of Roman numeral designations covered the earlier Nieuports, the type XI being officially known as the type XI (monoplane) 80hp Rhône. In April 1917 the designations were revised to use Arabic numerals, the type XI becoming the 'Nie 11C.1' but by then the original Bébé could only be found in training units. For the remainder of this text the revised designation Nie.11 and Nie.16 will be used. As a final twist, in contemporary documentation in France and elsewhere the N.11 and Ni.16s are referred to simply as 13 2 metre Nieuports.

The Nie.16

In order to provide some extra oomph within the existing airframe the 80hp Le Rhône was replaced by the 110hp engine. This did not result in any speed increase but the rate of climb was improved although handling was more difficult. A headrest was fitted but the differences extended a little more than that. The larger and heavier engine required a larger cowl and some internal structural changes. The angle of incidence was altered and in some cases the undercarriage was taller (due to a larger propeller). The Nie.16 equipped French units at Verdun and was the first Nieuport scout to see service. Modellers considering converting a nie.11 kit into a Nie.16 might note the differences. For those who worry about precise dimensions the Nie.16 was 140mm longer than the Nie.11. In 1/48th scale this translates as 2.9mm and in 1/72nd who cares? On contemporary



P3: This Nie.XI of Escadrille N.26 (serial N.11350 piloted by le Comte J.L.V. de Plandes Sieyes de Veynes was brought down intact behind German lines on July 3rd 1916. The early camouflage of sprayed brown and green is apparent here as is the edging tape which in this case appears to be silver. The unit marking adorns the fuselage and the Lewis is held in a later mount. Nieuports had a fabric strip doped at its front edge and loose at the back which covered the gap between the aileron and the wing. The only damage sustained by this machine was a broken tail skid.

drawings dimensions were often rounded off, and a good example is the Nie.11. In Jack Bruce's authoritative Windsock Datafile Special the length of the Nie.11 is given as 5500mm, the German drawing reproduced here states 5640mm, three different French sources state 5800mm as does an Italian source whilst V.B. Shavrov quoting Russian documents states 5600mm. No need for alarm, the 5800mm figure is a good example or rounding off, the best estimate is 5600mm. Of course a head rest has to be added but the kit engine (80hp Le Rhône) has to be replaced by a 110hp Le Rhône. Aeroclub retail white-metal engines of the larger engine in both scales but the matter of the cowlings needs attention. The overall diameter of the 80hp engine was 950mm, that of the 110hp engine 1009mm. The cowl of the Nie.11 was 1040mm, by proportionate reduction that of the Nie.16 was 1100mm, a difference of 60mm or in 1/48th scale 1.25mm.

Both types were armed with Le Prieur rockets (see the author's feature in Windsock (Vol.10/No.3 May/June 1994) and both were armed with the overwing Lewis. However, some Nie.16s were armed with a Lewis fixed on top of the fuselage synchronised by the Alkan-Hamy gear which virtually altered the gun mechanism and was not always reliable. Navarre flew a Nie.16 so-armed. The Nie.16 of course offers expanded finish and marking opportunities. As a matter of interest, in 1993 Ray Rimmel calculated that over the years ten static scale kits of the Nie.11 had been issued and four flying scale. Of course long before the plastic age, kits of the Nie.11 were common, both static and flying.

Armament Matters

The photographic selection illustrates the commonest forms of Lewis overwing mount, a system necessary until the availability of gun synchronising (NOT interrupter) systems. Usually

P4: The Russians employed Nieuports of every model from the early monoplanes to the type 24bis, many imported from France, many more manufactured under licence. The Duks factory of Moscow was a principal licensee and also repaired damaged Nieuports; its 'trademark' was the cockade with the extra division lines. Seen here is a French-built Nie.XI in the foreground with a French gun mount and no head rest. It has the Duks cockade on the rudder which may have been replaced whilst the second Nieuport XI is Duks-built with the head rest (a Russian addition) just visible. In the background is a Morane-Saulnier type I. The actual unit is not known for sure but the period is late autumn 1916 (note greatcoats).

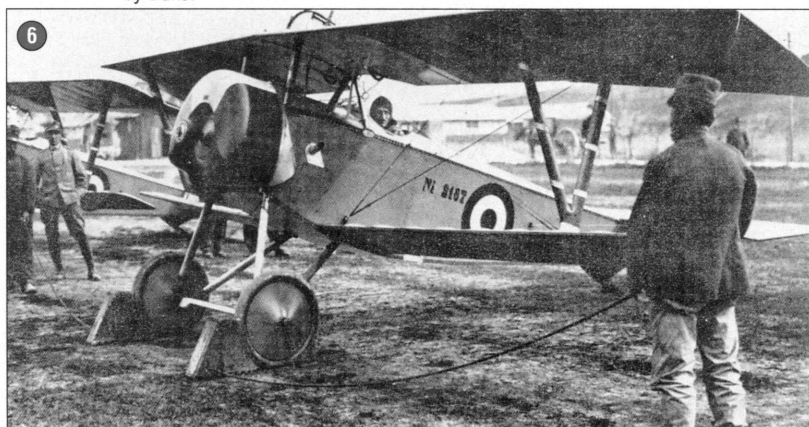




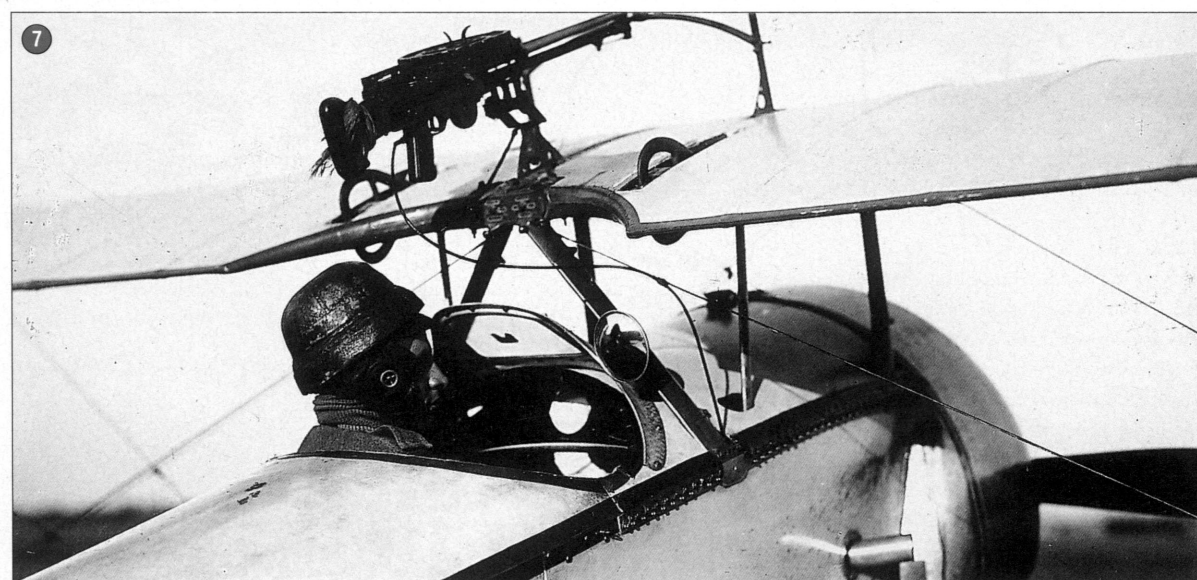
P5: Another Duks-built Nie.XI, unarmed and apparently unmarked. This may have been photographed at the Duks airfield at Moscow. Note the Voisin LA in the background, another type built under licence by Duks.

overlooked by writers is the great disadvantage the Allied pilots suffered by being armed with a single Lewis. In fact the armament of the Nieuports and the D.H.2s was feeble compared with that of the German opponents. The Mk I Lewis was prone to stoppages even before its radiator and casing were stripped, the venerable gas chamber exposed and it was mounted on the top wing. Before the availability of special oil

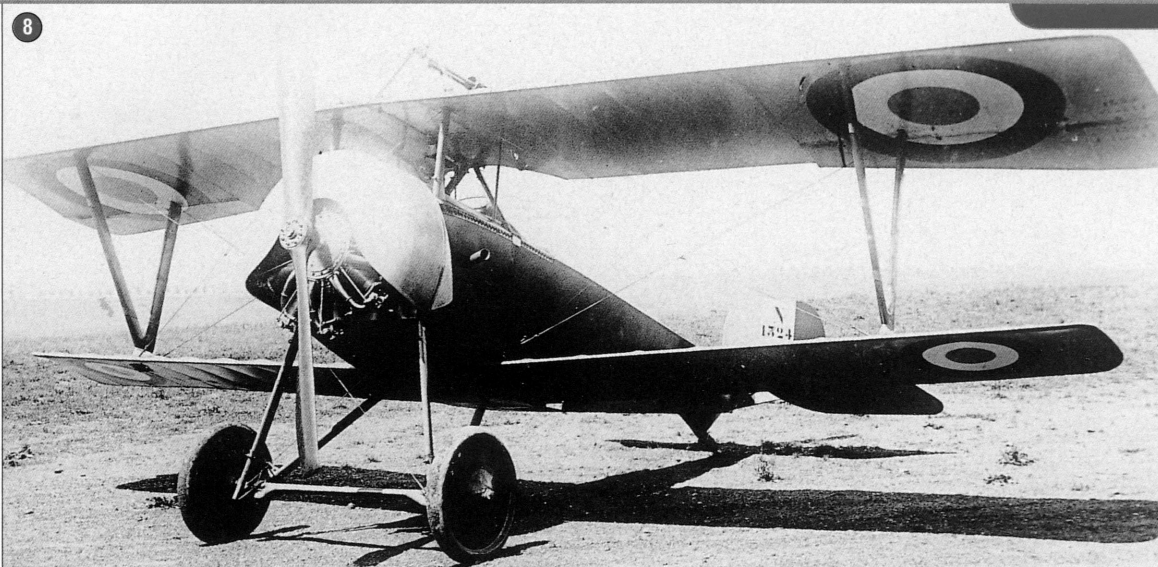
and much later a built-in heater it was even more so. The original magazine held only 49 rounds and as the rate of fire was in the area of 550 rounds per minute (rpm) or about nine rounds per second, and allowing five rounds for a warm-up burst, the magazine would empty in a five-second sustained burst. However, this was never supposed to happen because a burst of ten rounds or so would 'blue' the barrel. The result was that bursts were restricted to five or six to avoid this and conserve ammunition. To reload, the pilot had to reach above and pull the gun down to remove the empty magazine and replace it with a new one, all this in the face of the slipstream and whilst the stick was held between his legs, and hoping that his opponent would not take advantage of the situation. He then had to push the gun up and forward (later mounts used bungee cord to assist this action). Some hotshot pilots liked to hold the gun back and fire upwards but this was a stunt, and the Lewis was regarded as a fixed gun. The enemy had at least one IMG 08 (Spandau) which could fire at between 400 and 500 rpm, then the twin-gun Albatros and Halberstadt scouts appeared with two IMG 08s each fed by a belt of at least 250 rounds. Even when the French sensibly fitted fixed synchronised Vickers to their later Nieuports the RFC retained



P6: The Italian Societa Anonima Nieuport-Macchi of Varese obtained a licence to build the Nieuport X two-seater in 1915. The company subsequently proceeded to manufacture type XLs in quantity, 450 from the parent Macchi firm and a further 93 from the Officine Elettro-Ferrovie of Milan. The first Macchi-Nieuport XLs entered service in February 1916. The machine seen here, serial Ni.2167, is a unit of the 72a Squadriglia Caccia at Castenedulo in Northern Italy in 1917.



P7: A Macchi-Nieuport Bébé of the 76a Squadriglia, serial Ni.1651. Of note is the Lewis with characteristic large Italian hand grip. Note the rear sight glued to the windscreen, for it should be noted that the overwing Lewis was employed as a 'fixed' gun. The various mounts all had the necessary ability to be drawn back to enable the pilot to change the magazines.



P8: This Nieuport XI, serial N.1324 piloted by Lt. Jean Raty of Escadrille N.35 came down intact behind enemy lines on July 6th 1916. The victor was Lt. Kurt Student of the Fokker-Staffel of the III Army. This German photo was taken shortly after the landing.

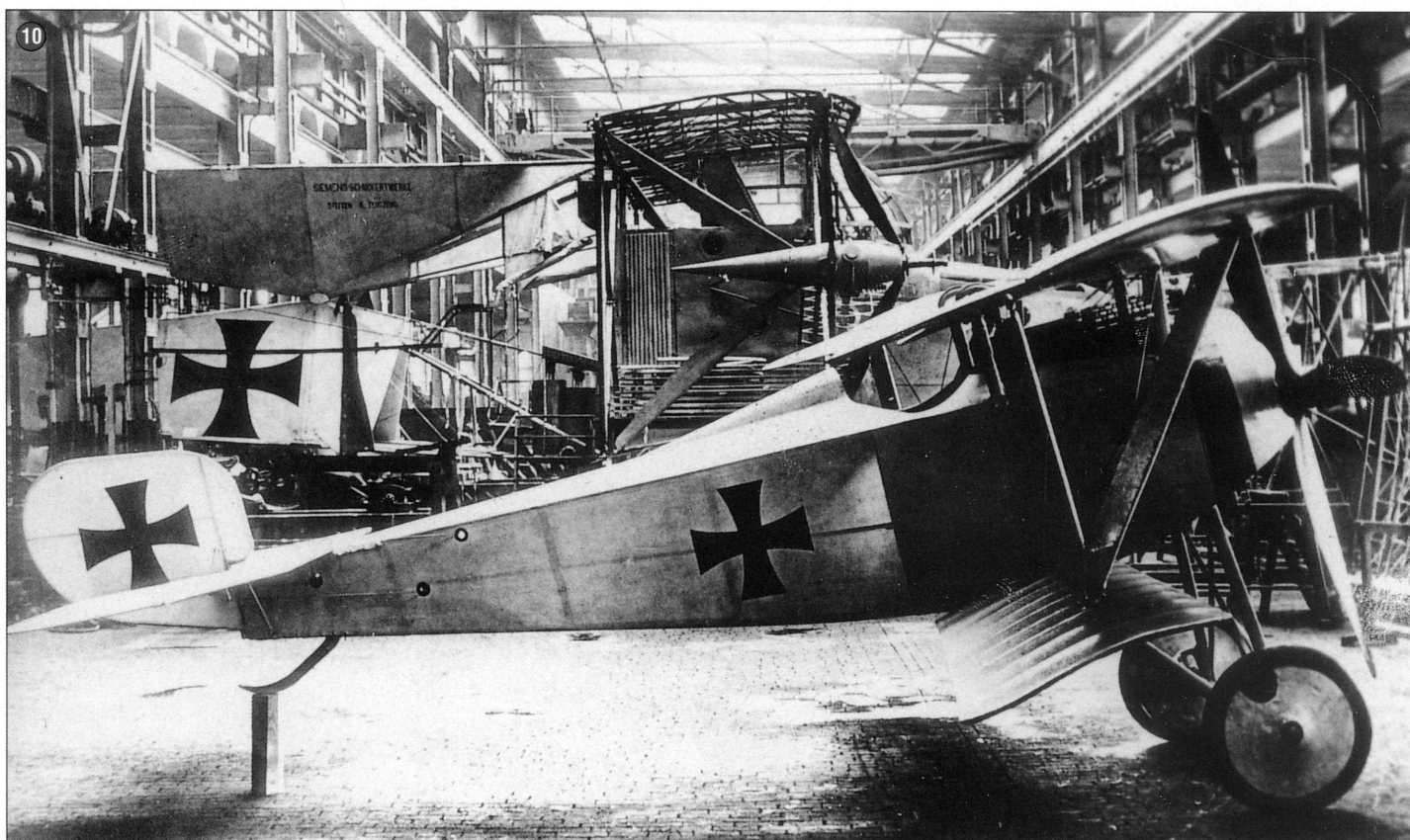
P9: After a few minor repairs and the overpainting of the cockades and the application of the Iron Cross N.1324 it was flown (it is not certain that the pilot seen here is Student). It was also fitted with a synchronised IMG 08 (Spandau) machine gun instead of the Lewis.

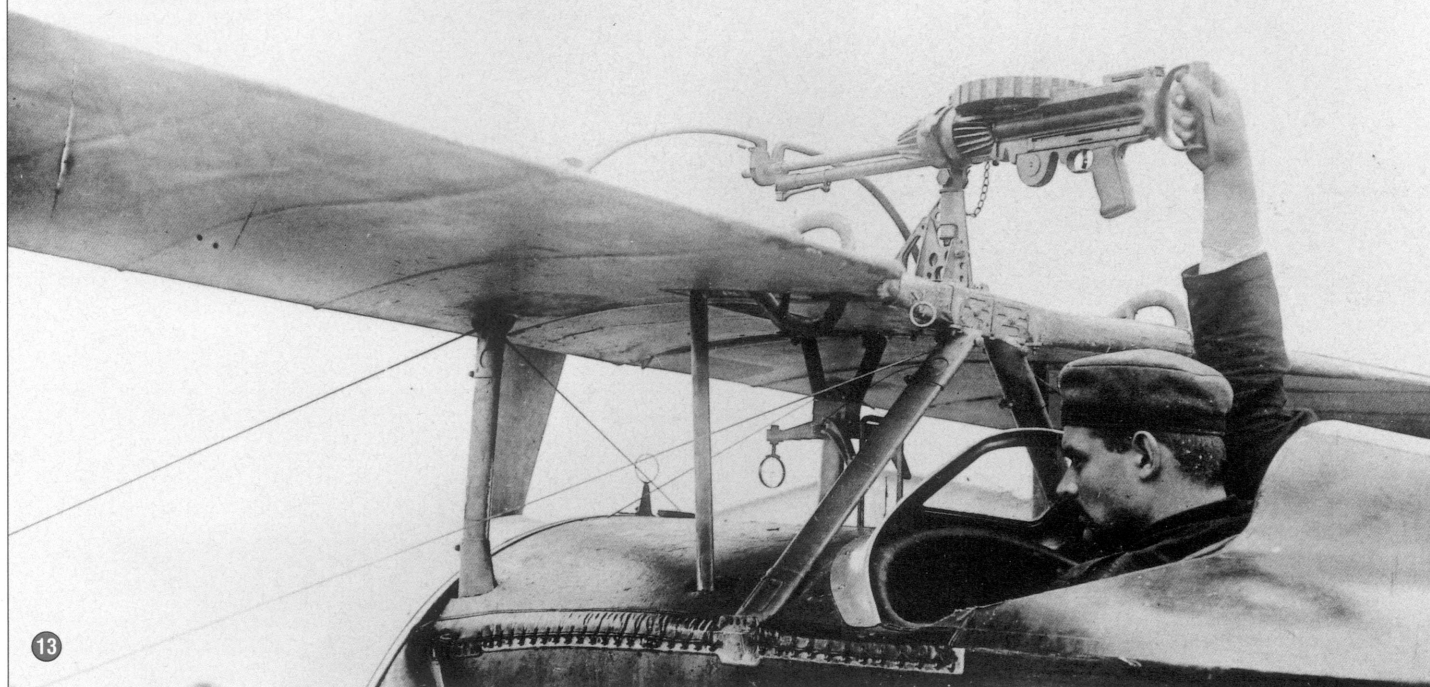


P10: the Germans were so impressed by the Bébé that drawings were sent to three German manufacturers, Albatros, Euler and Siemens-Schuckert with a view to building copies. The only copy that was built in numbers and saw service was the SSW D.1 which followed the Nieuport lines fairly closely. Seen here is the prototype D.1, serial 3503/16 at the SSW at Siemenstadt, with a huge R.IV giant in the background. The D.1 at this stage had a four-bladed propeller, later replaced by a very large two-bladed type. Powered by the Siemens und Halske Sh.1 rotary of 110hp. It was armed with a single IMG 08 machine gun.

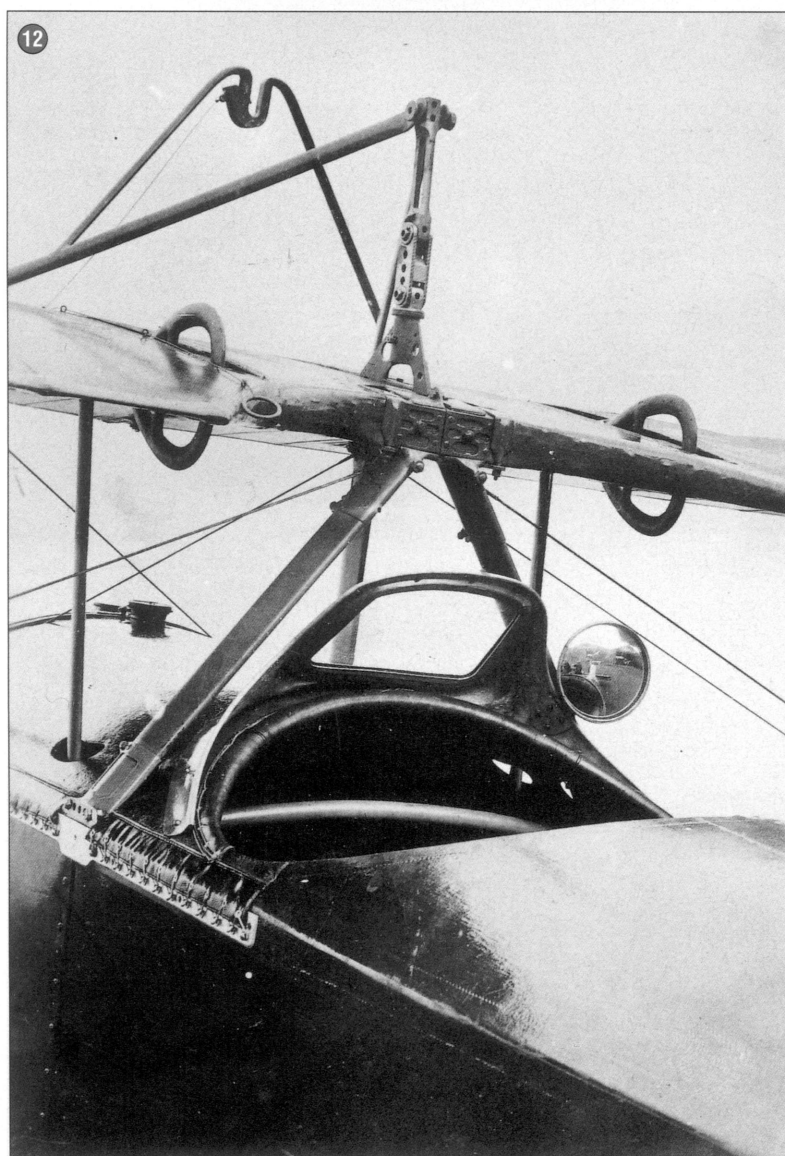


P11: The small Euler company went even further with their copy and produced a single prototype serial D.274/17. Powered by a 100hp Gnome the design was well out of date by the time that it appeared.

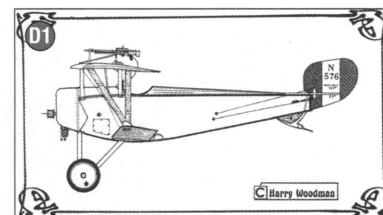




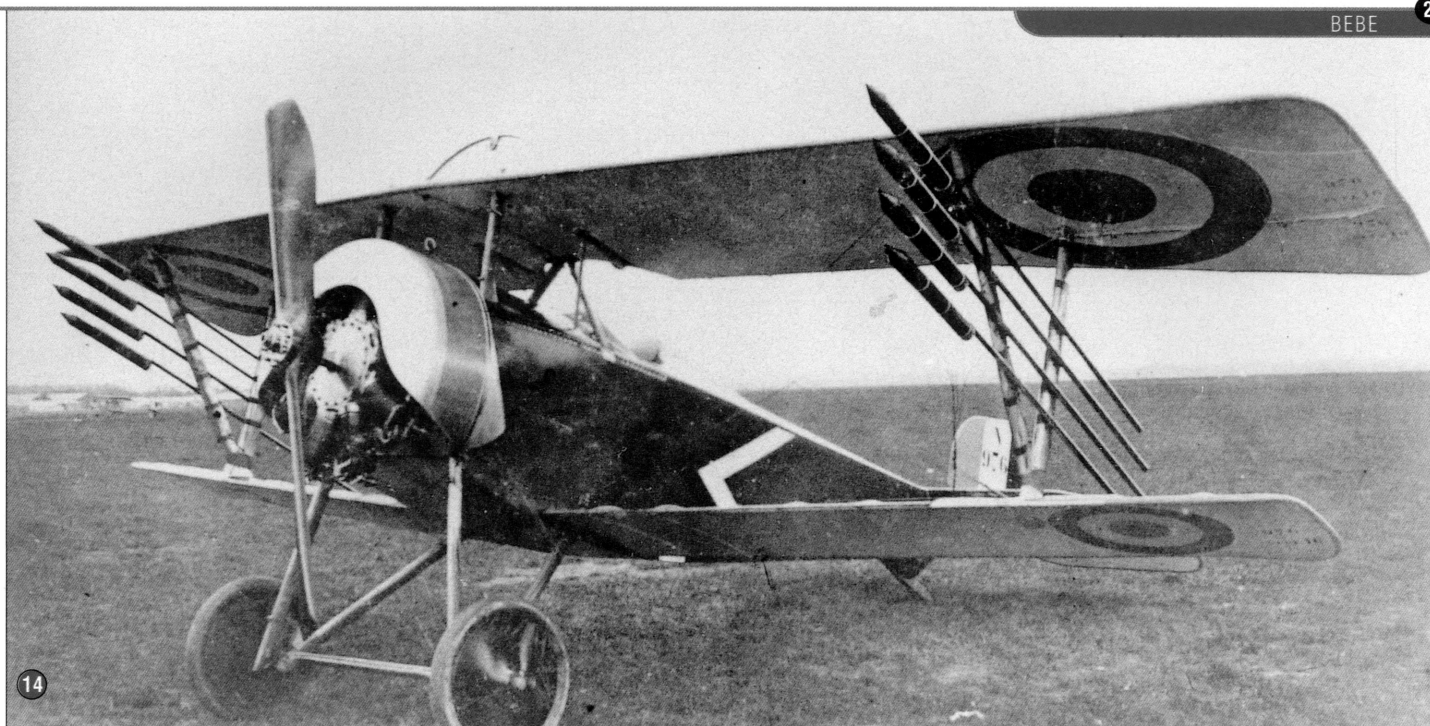
P13: Another early type of mount is seen here on this Nieuport type XVI (probably N3959 of Escadrille N.65 captured on May 22nd 1916). A German groundcrew man demonstrates the armament for the camera, but the Bowden cable which fired the gun is missing. The gunsight is the rather complicated concept designed by Y.P.G. Le Prieur, a naval officer (he of the rockets) which was abandoned in favour of the simpler ring and bead. Note the distinguishing headrest fitted to the type XVI.



P12: The Moreau gun mount was probably the commonest fitted to the Nieuport XI. When the Lewis was in its normal firing position or at rest the muzzle was held in the crutch on the foremost 'V'. To reload or clear a jam the pilot grabbed the handgrip and then, inserting fingers into the ring (at left of cut-out), pulled and this released the spring-loaded muzzle-holding catch. The gun could be pulled back and down due to the upright member breaking in the middle. After removing the empty magazine and reloading, the pilot pushed the gun forward and up, the upright member being fitted with a powerful spring which assisted this. The muzzle fell back into the crutch and was held by the spring-loaded catch. Note the rear-view mirror fitted to many Nieuports and the aileron control rods.



D.1: Note: This is intended as a heading illustration, it can be reproduced in SS or it can be reduced to 1/48th scale or 1/72nd scale. Reduction guidance is included on the drawing. The border is deliberately art nouveau, still lingering on into the first two decades of the 20th century. No caption is needed for this drawing as this is a purely decorative item.



the inadequate overwing Lewis even on the S.E.5, presumably because some 'ace' pilots preferred it.

Colours

The Nieuport 11 and 16 appeared at a time when consideration was being given to new finishes and the prospect of camouflage. The commonest finish for the first Nie. 11s was overall clear-doped (pale cream colour) with a characteristic dark edging tape along the fuselage, wings and tail surfaces. The exact colour of this tape is not known for sure and sometimes appears dark, sometimes not. The Nie.11 in the MAE has dark blue-grey tapes. Eventually a form of camouflage appeared, especially on the Nie.16s, consisting of irregular patches of brown and green sprayed on over the upper surfaces. Cockades on the upper wing were either painted over or not applied and as camouflage this was effective when the aircraft was on the ground or climbing to the attack.

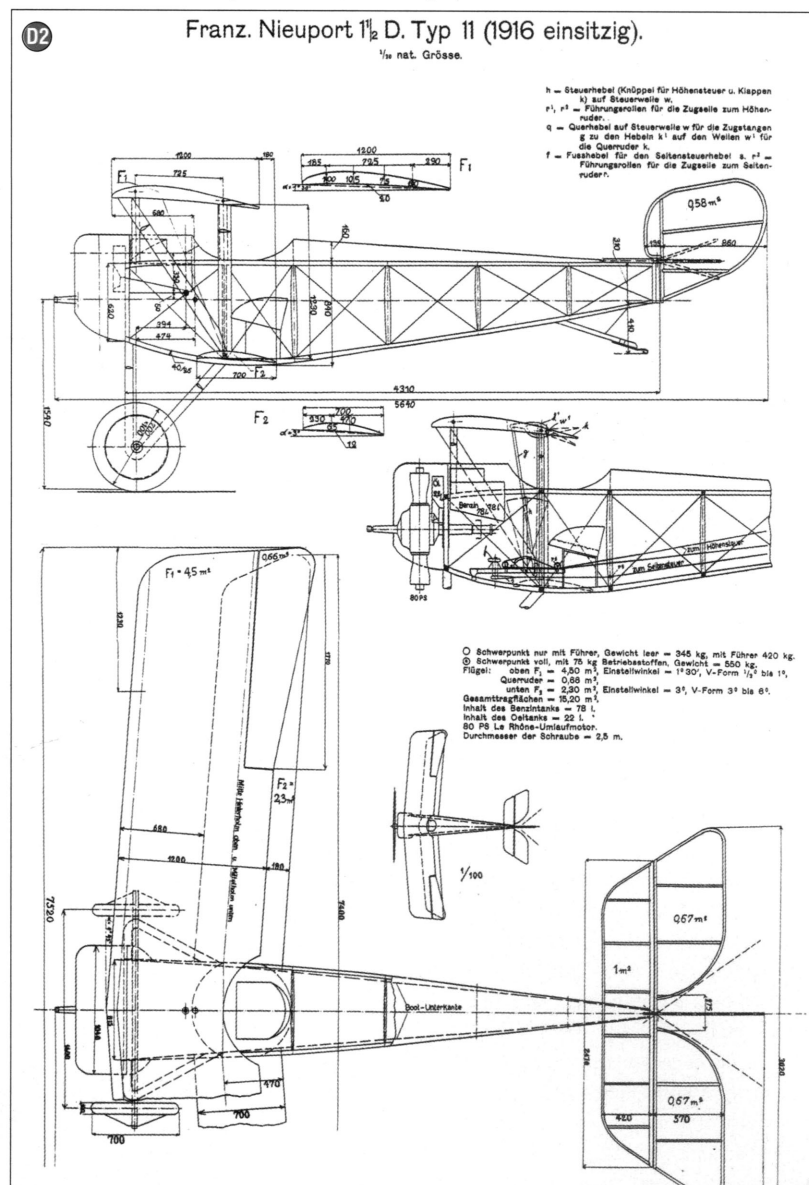
In the classic Double-Decker C.666 in the spring of 1916 near Chalons the observer Heydemark is almost taken by surprise by a Nieuport climbing to attack him. In his own words... *Formerly all French single-seaters... bore the two red, white and blue cockades on the upper wings, but now they have changed their colour to a brown-green so that only their movements show them up against the landscape beneath.*

However, this state of state of affairs would not last long, as the cockades were soon reintroduced rather defeating the more elaborate later camouflage schemes. Despite its inadequate armament and some structural weaknesses, Gustave Delage's Nie.11 and the types which followed played a decisive part in the war in the air on four fronts. Aesthetic in appearance and effective in action, the Bébé was a true *coup de maître*. **MAM**

D.2: The German magazine Zeitschrift für Flugtechnik und Motorluftschiffahrt published some of the best drawings of captured allied aircraft during WW1. This spread appeared in December 1916 along with a technical description. The German title is 'French Nieuport 1 1/2 biplane Type 11 (1916 single-seater)'. The profile although simple is accurate apart from the over-large cockpit. Details on the drawing include the weight with pilot 420kg, without pilot 345kg; capacity of fuel tank 78 litres; oil tank 22 litres and the span of the propeller 2.5m.

Note: This drawing can be reproduced full size, but to reduce it to 1/48th the overall length on the drawing (5649mm) should be reduced to 117mm. However this would make the dimension less easy to read. It should not be reduced to 1/72nd scale as that would defeat the object entirely.

P14: The Nieuport XVI (probably of Escadrille N.26) was basically the type XI with a 110hp Le Rhône and a headrest although there were some other less visible alterations. It was not universally appreciated by many pilots at the time but it did prove its worth along with the type XI during the long Verdun battle. The Le Prieur rockets originally tested as possible anti-airship weapons were effective against balloons. They were fired by an electric contact controlled by the pilot from a switchboard, but the rockets did not always follow the intended flight path!





Little Albatros

THE AERO L-39

By Glenn Ashley

Additional images and production data by V. Suchy

Whilst the British BAe Hawk is celebrating its 20th Anniversary this year and continuing to attract orders from overseas, one of its major competitors has a six year start over it, although it is still a fairly new sight to Western eyes. It is the Czech-designed Aero L-39 Albatros.

Being similar in size and role to the Hawk the L-39 has proved to be a real success story for the manufacturers and like the Hawk still continues to attract export orders. Designed in the late 1960s as a replacement for the L-29 Delfin the prototype flew for the first time on 4th November 1968 piloted by Rudolf Duchon. During the development of the L-39 problems were encountered with the powerplant, the Ivchenko AI-25, and getting it to fit to the satisfaction of the design team. The problem really stemmed from the poor air intake to the front of the engine so a number of styles and length of intake were tried before a suitable design was found.

The problems and their rectification had delayed the introduction of the aircraft into service as production aircraft did not start to appear until the latter part of 1972. Initially the aircraft entered service with the Czechoslovakian and Soviet Air Forces at about the same time during 1974 in an advanced training role. Once the aircraft had been integrated into service it proved to be a very popular aircraft as it was very easy to fly and maintain.

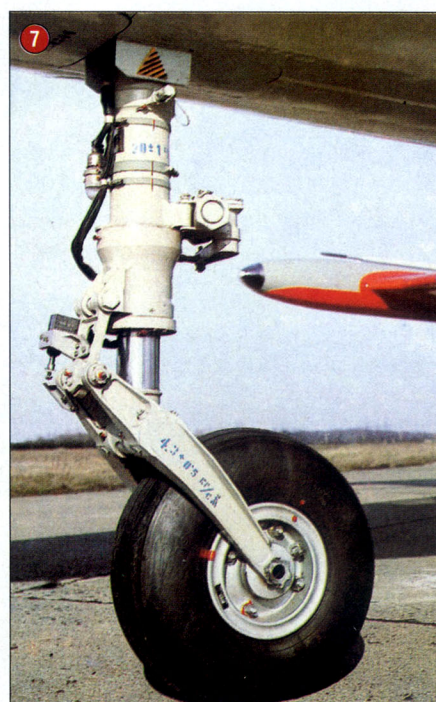
The tandem cockpit saw the rear position for the instructor raised to give him a better view over the head of the student in front but still retaining the clean lines of the aircraft. For maintenance the aircraft can be broken down into three sections to allow easy access for ground crews. These sections

are the forward fuselage, wings and rear fuselage/tail, meaning that in theory the aircraft can be turned round in a fairly short period of time. Also any damaged items in a combat situation can be replaced and need not remove the aircraft from operational duties permanently.

1. Basking in the sun at the 1991 IAT at RAF Fairford is Czechoslovakian AF L-39ZZA, 2430, which played a small role in the Tiger meet. Clearly shown is the Sand and Green upper camouflage with light grey undersides
(©Glenn Ashley)

2. Looking at the tail section which shows the numerous intakes featured in many East European designs and the Tiger striped top to the fin
(©Glenn Ashley)





3. The wing tip tanks incorporate landing lights in the front sections

(©Glenn Ashley)

4. The main undercarriage features doors that close when the legs have been extended. This is featured on the KP kit, it saves detailing the interiors of wheel wells. Also there are good details shown of the underwing tank/pylon

(©Glenn Ashley)

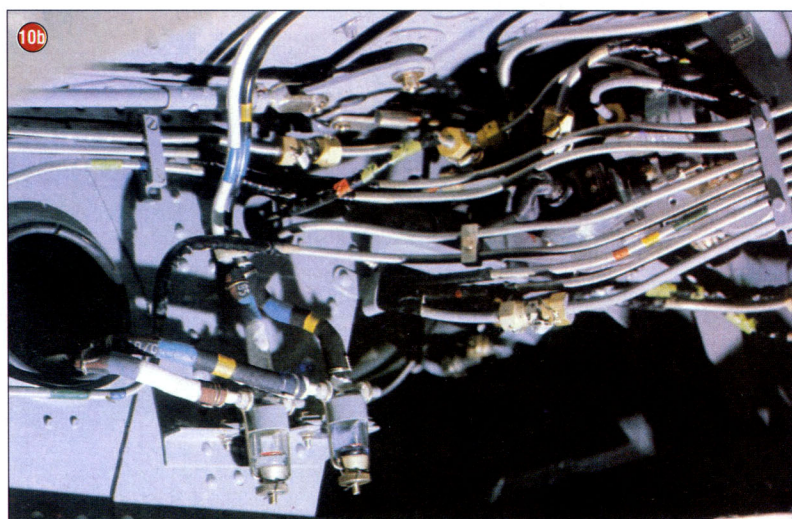
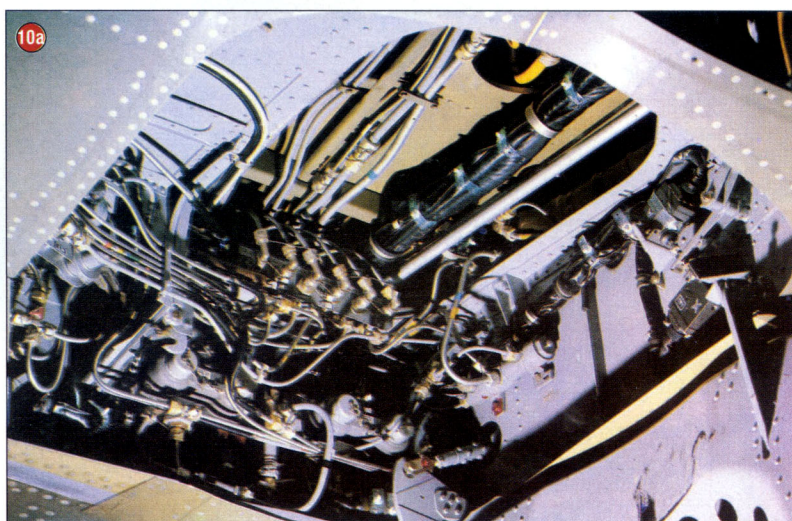
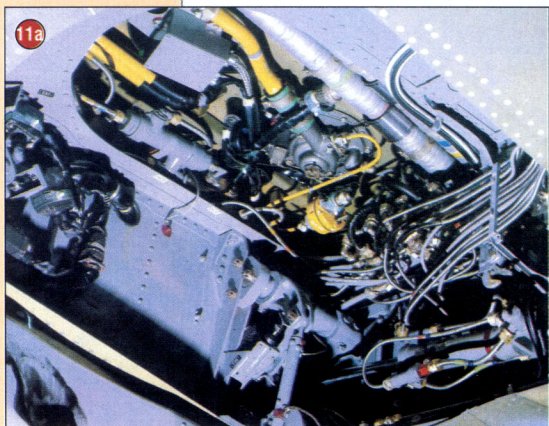
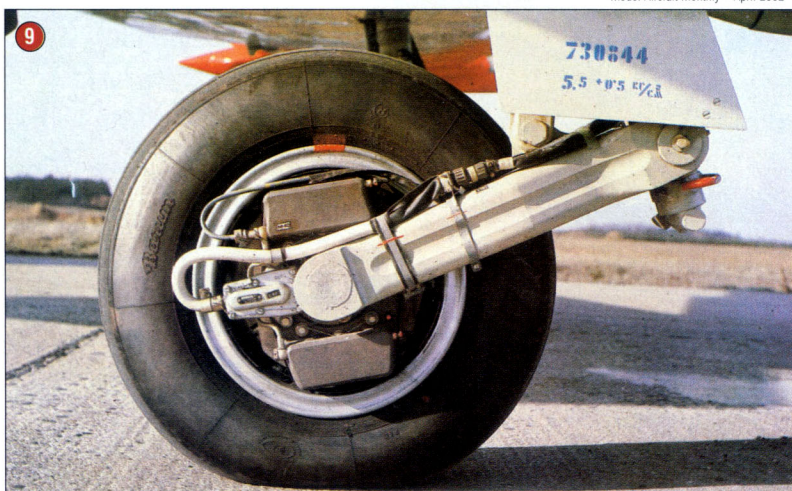
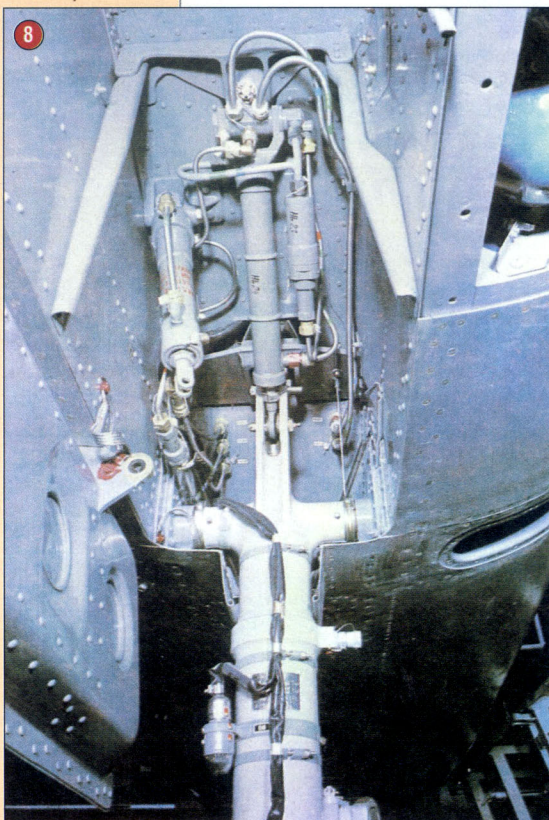
5. The dual cockpit features a split canopy. Note the details in the upper section of the cockpit

(©Glenn Ashley)

6. The gun pack on the kit requires some extra detailing work which can be gleaned from the photo. Note the 1. Letka badge featuring the Tiger

(©Glenn Ashley)

7. Nose wheel oleo



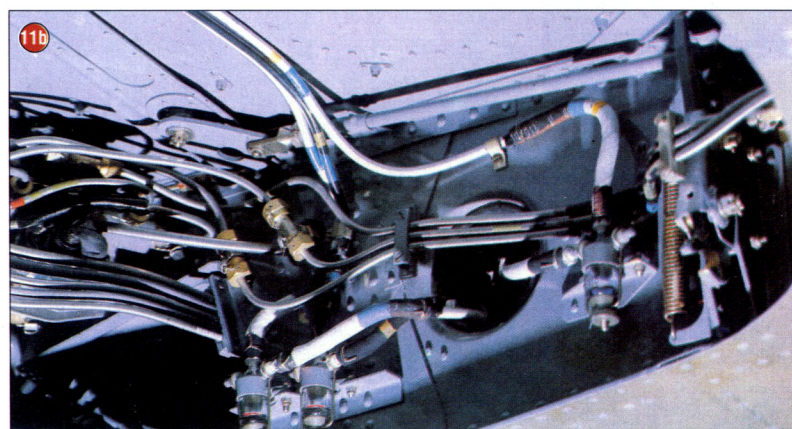
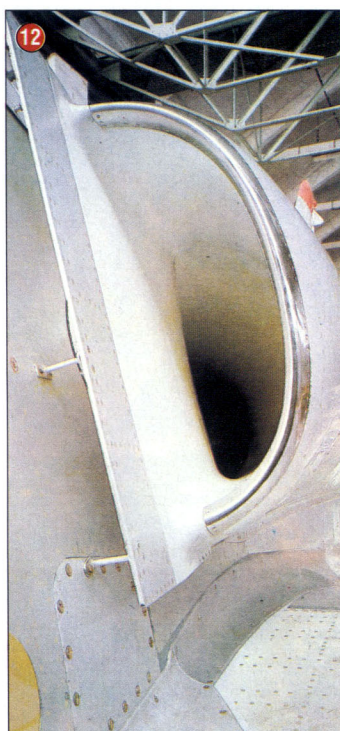
8. Nose undercarriage pivot and well

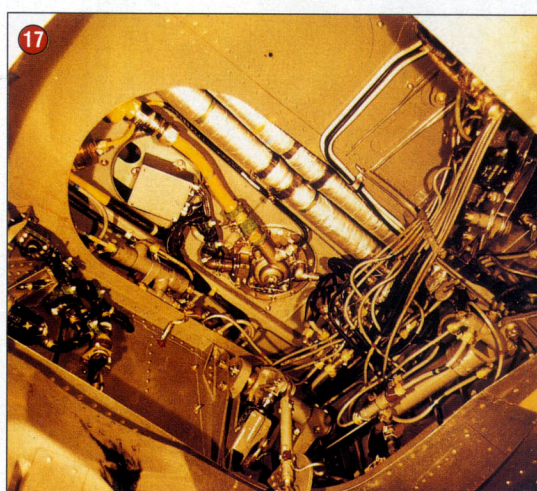
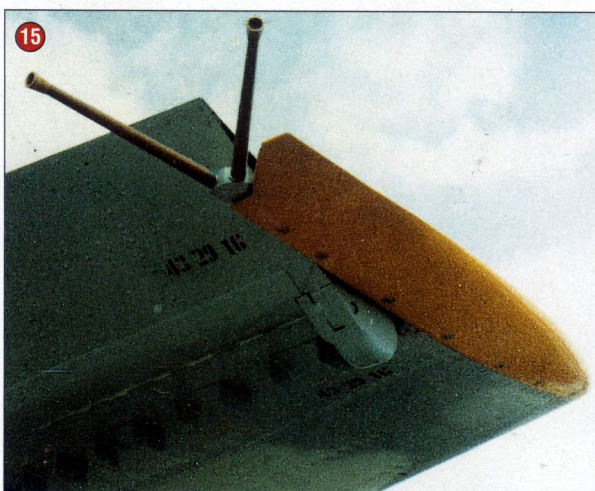
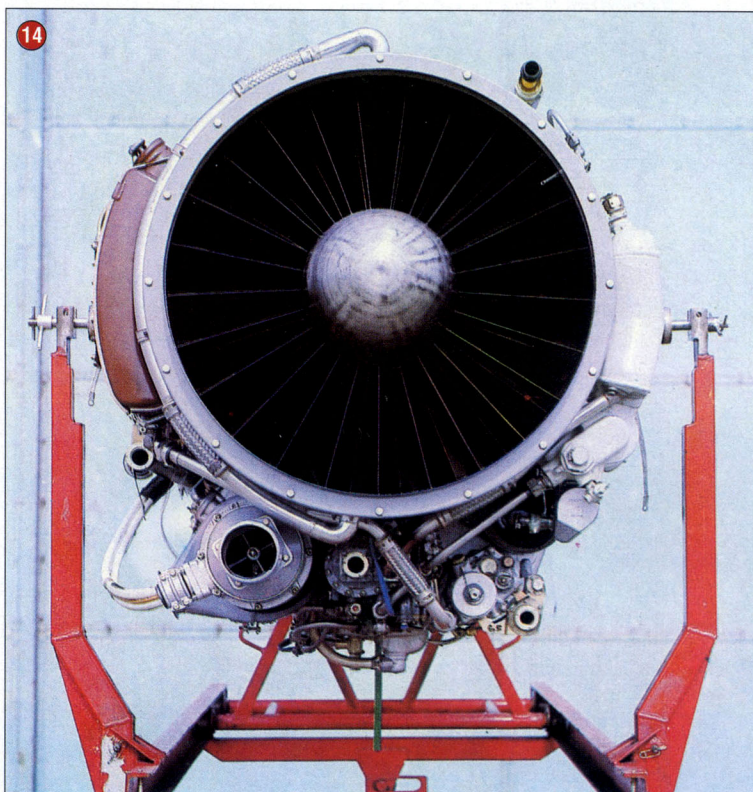
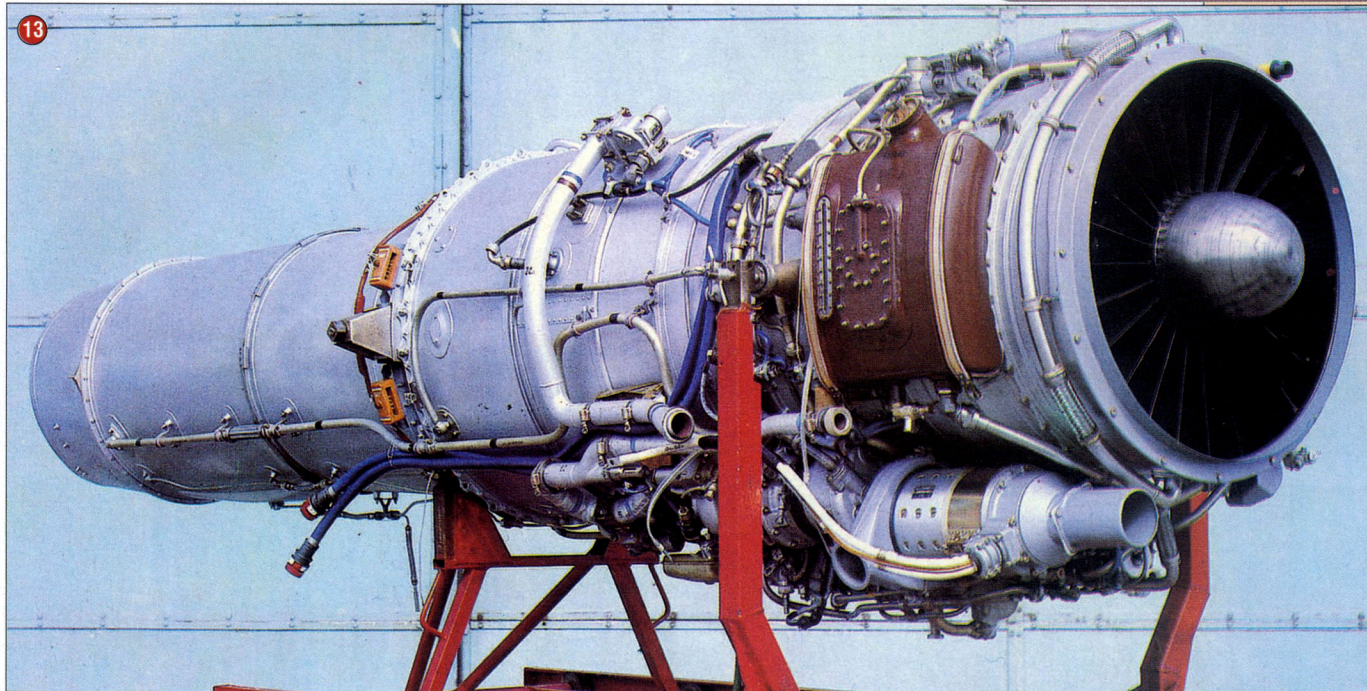
9. Main undercarriage and wheel

10. Two views into the port undercarriage bay

11. Two views into the starboard undercarriage bay

12. Air intake





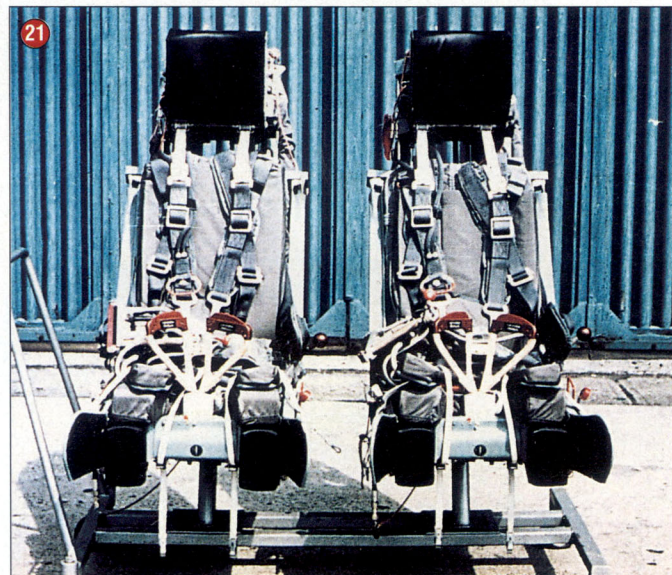
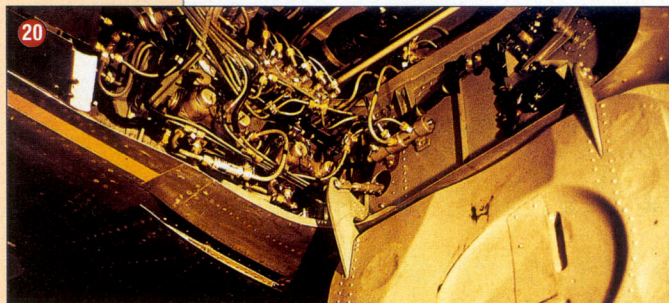
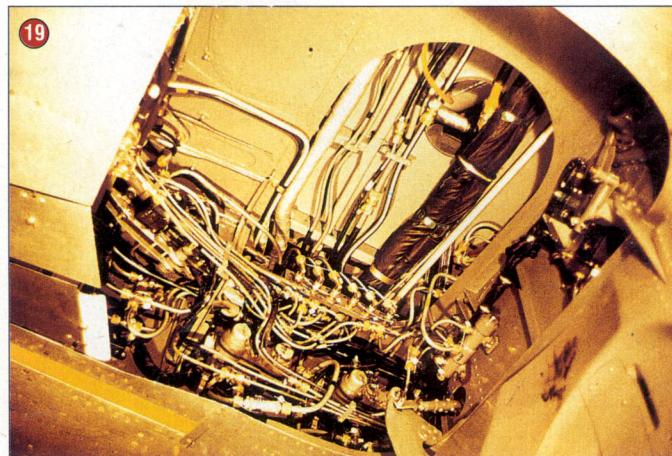
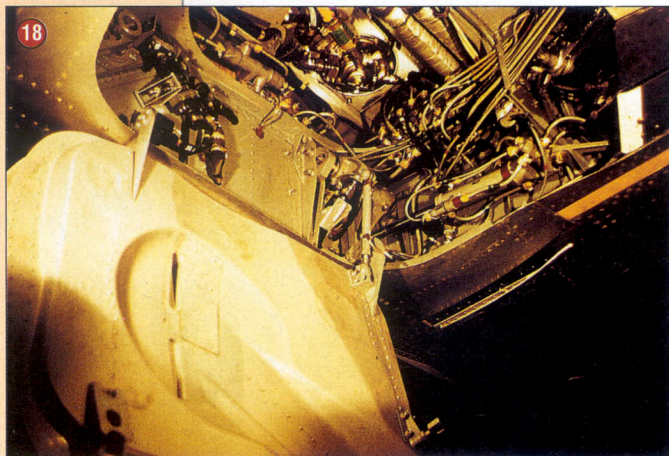
13. AI-25TL engine

14. AI-25TL engine

15. Tailplane tip for a Syrian L-39

16. Overall view of the vertical fin and tailplanes

17. Starboard undercarriage bay



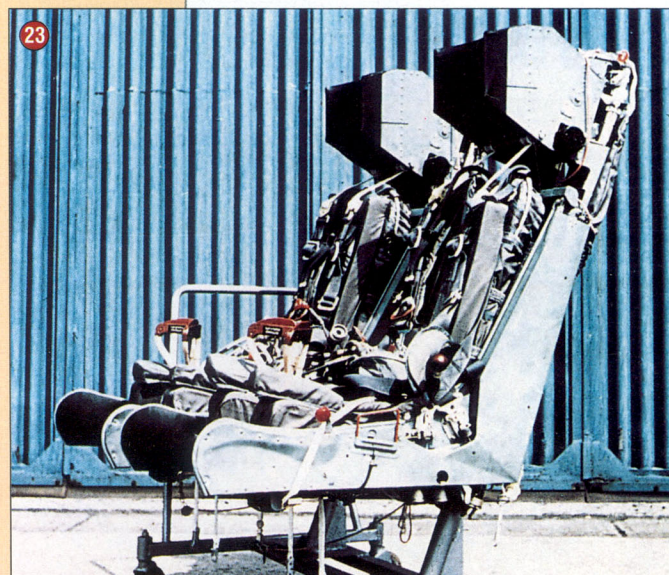
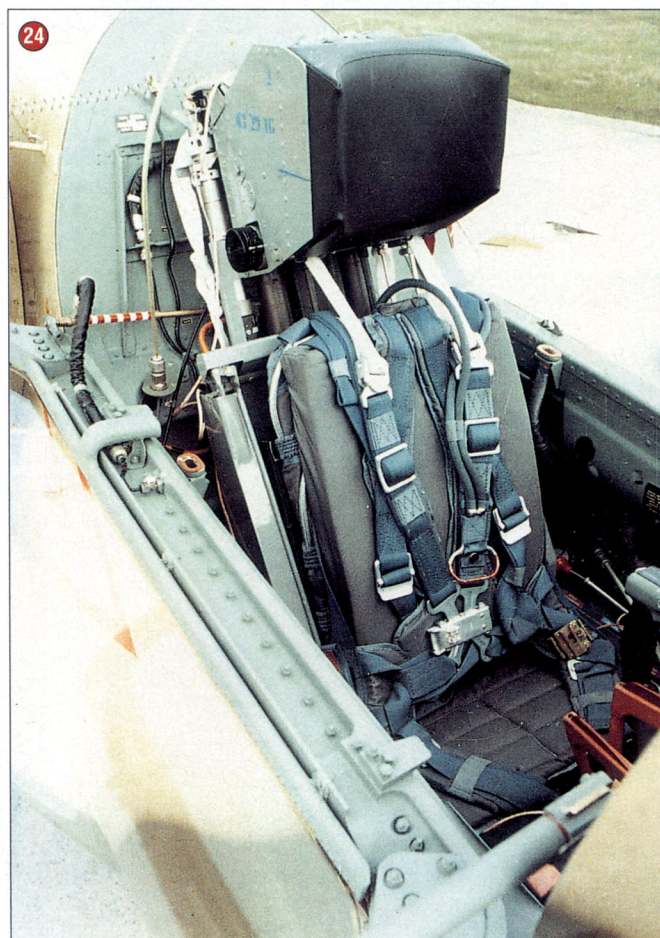
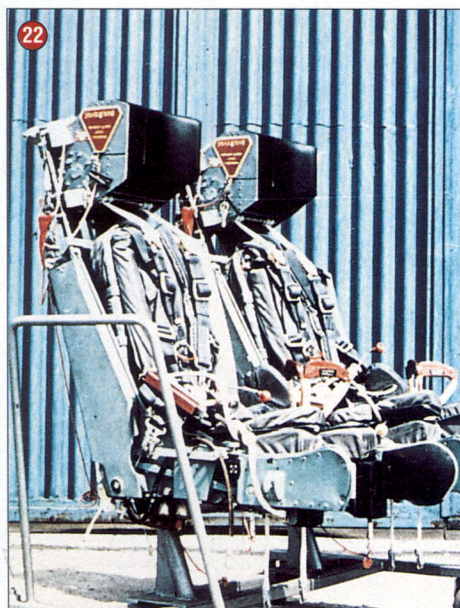
18. Starboard undercarriage bay and inner door

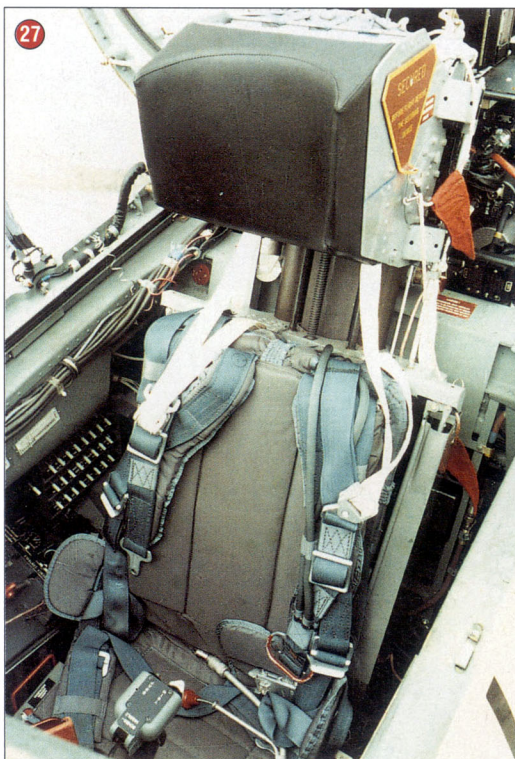
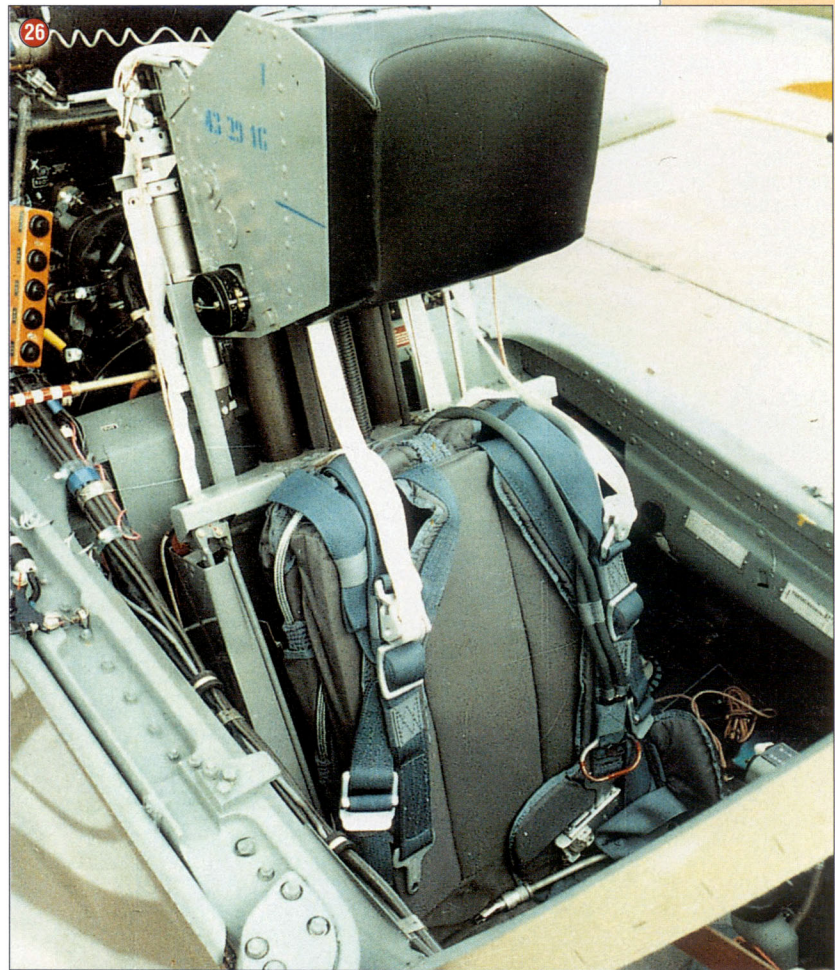
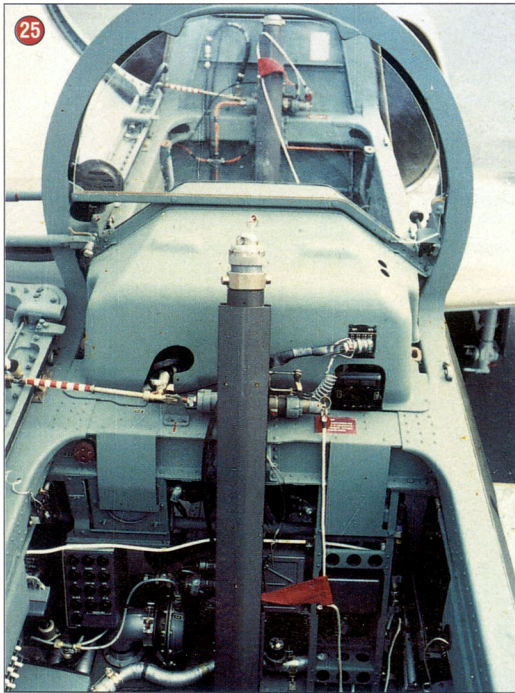
19. Port undercarriage bay

20. Port undercarriage bay and inner door

21-23. Three views of the ejection seats fitted to the L-39

24. View of the rear ejection seat in position





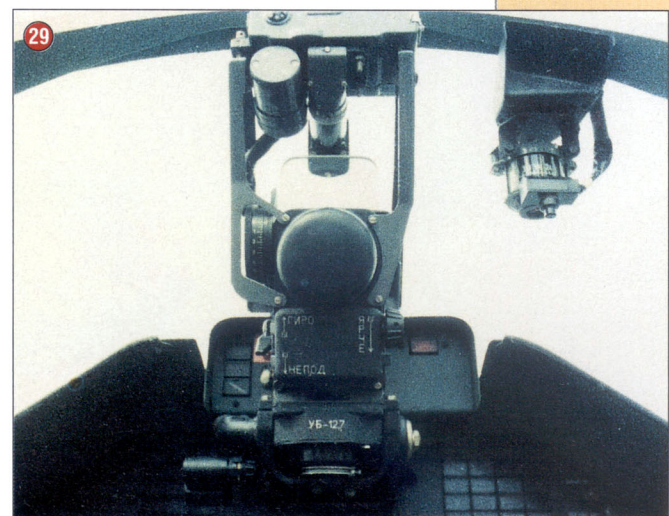
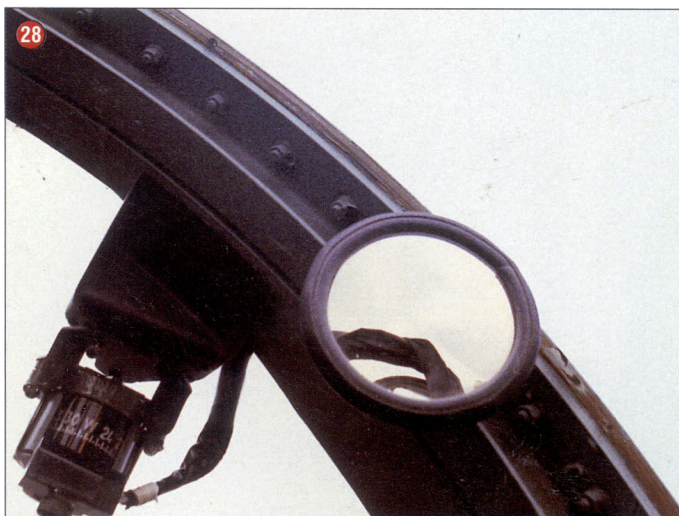
25. A view of the mid-cockpit area with both ejection seats removed

26 & 27. Two views of the front ejection seat in position

28. Rearview mirror in the front cockpit

29. Gunsight and compass in front cockpit

30. The rear fuselage area showing the stencils etc evident in this area



31. L-39 S/No. 332549 (Aero No. 186) seen taxiing out for a test flight

32. L-39 S/No. 831211 after overhaul. Note 332549 in the background

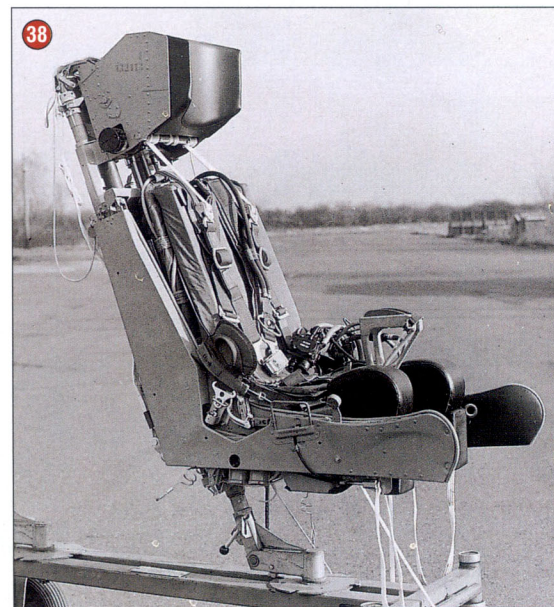
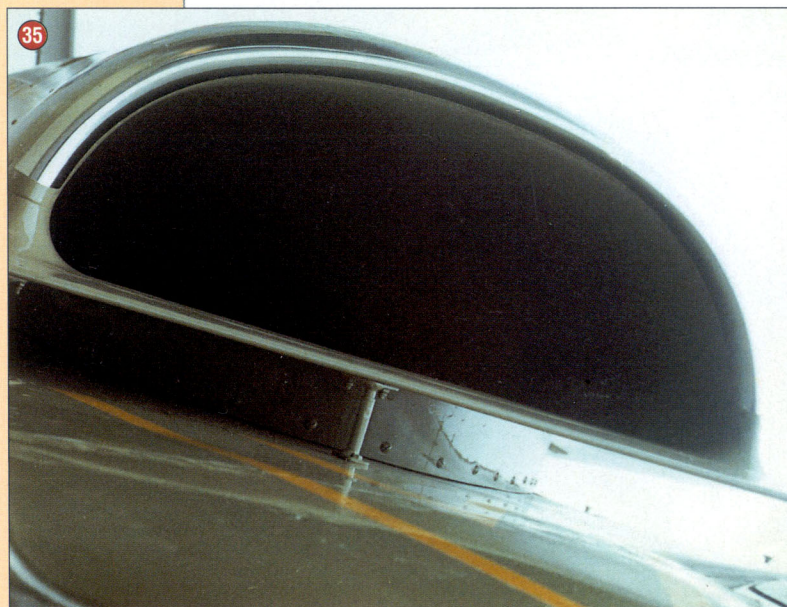
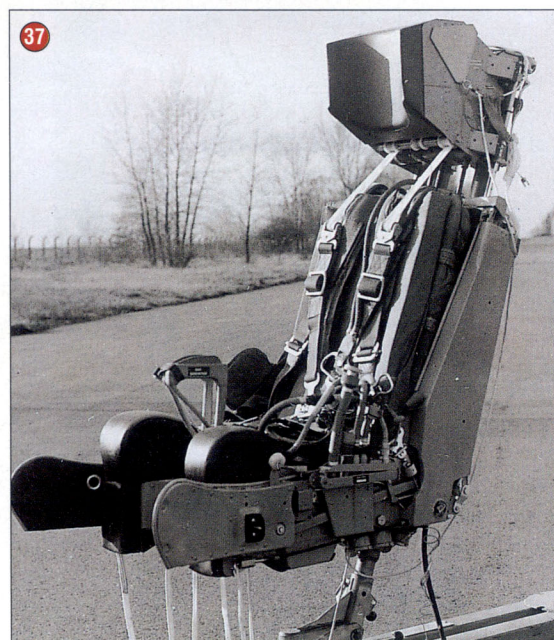
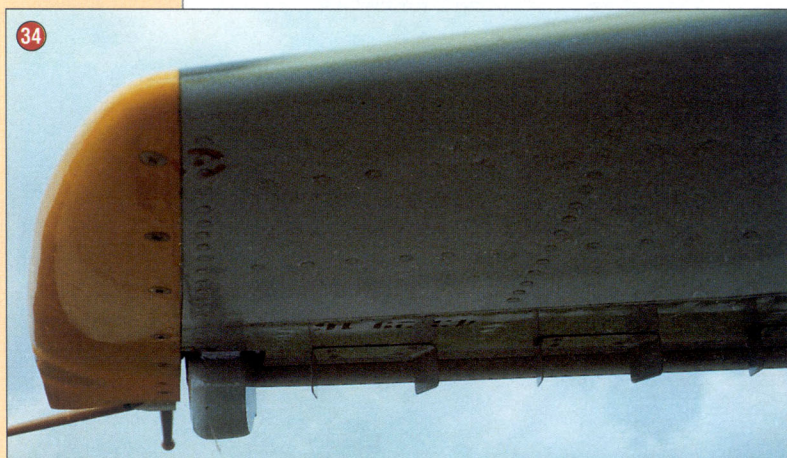
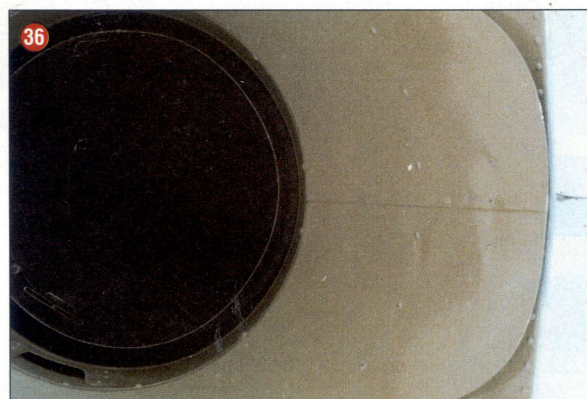
33. L-39 S/No. 831211 (Aero No. 200) seen taxiing out for a test flight

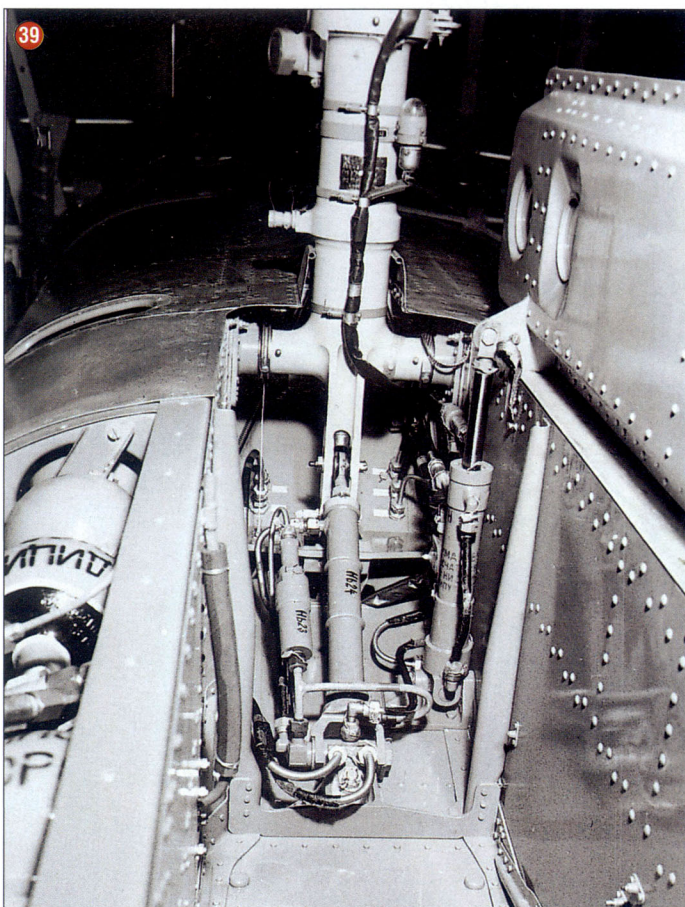
34. Overall view, from the front of the tailplane

35. Close-up of the fuselage-mounted intakes

36. A look up into the jet pipe

37 & 38. Two shots of the ejection seat type fitted to the Syrian machines





39. A look up into the nose oleo bay

40. Overall shot of the main oleo leg fully extended

41. S/No. 931445 (OK-JXE) and others prior to delivery in September 1979

42. L-3920 OK-JXD for Libya prior to delivery in September 1979

43. Close-up of the insignia carried on the nose of the Iraqi L-39s

44. Iraqi L-39, S/No.630809.



45. Another close-up of the insignia carried on the nose of the Iraqi L-39s

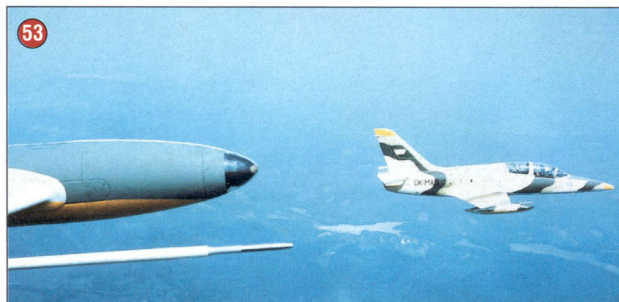
46. Overall shot of the vertical fin of this Iraqi machine

47. Ferry tanks carried by these Iraqi machines prior to delivery

48. Overall shot of the starboard wing of 630809 prior to delivery

49-51. Iraqi machines prior to their delivery





52. Iraqi L-39,
S/No.630807

53 & 54. OK-MXB on
its delivery flight

55. Syrian L-39
marked OK-MX but
lacking its individual
aircraft letter

56. L-39ZO (Libyan)
flying over Prague,
note Prague castle in
the background

57. Syrian L-39,
OK-KXF setting out on
a test flight

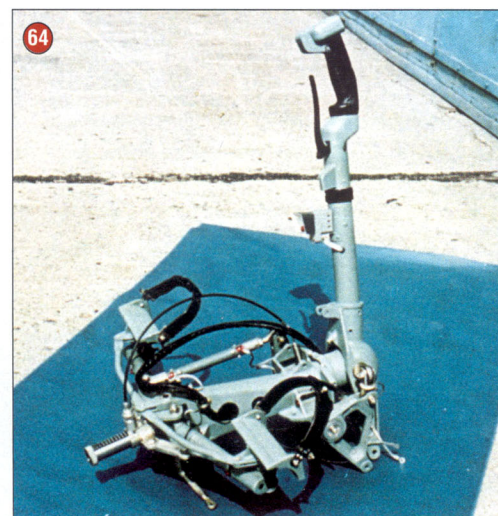
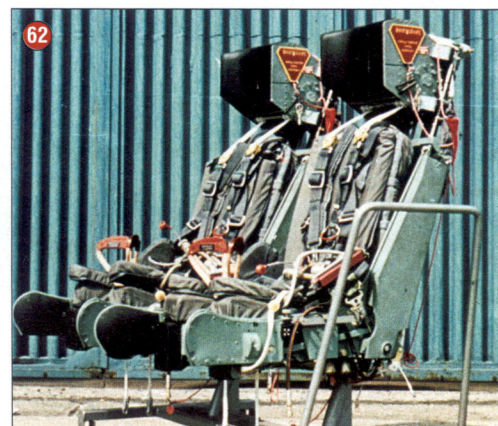
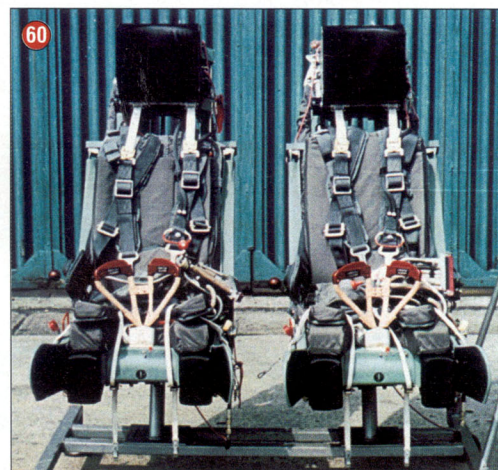


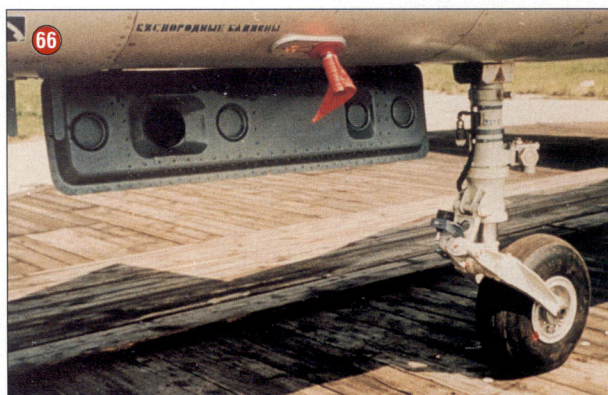
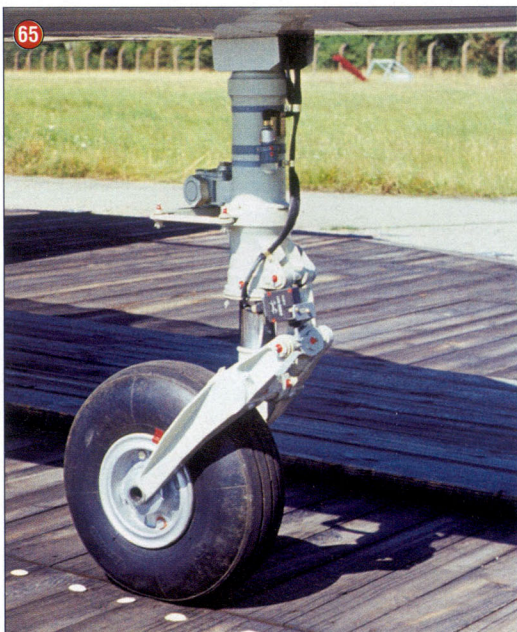
58 & 59. Two shots of the cockpit interior of a Syrian L-39 with delivery flight equipment installed instead of the gunsight

60-62. Three views of the type's ejection seats

63. This shot shows the APU in the deployed position

64. The control column assembly taken out of the airframe



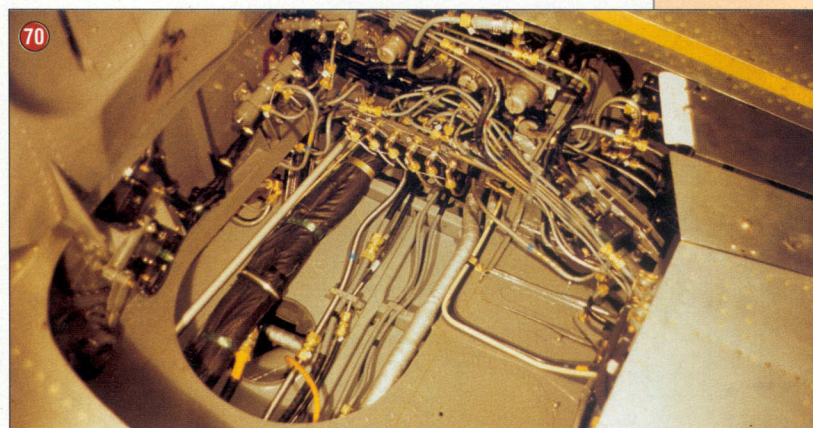
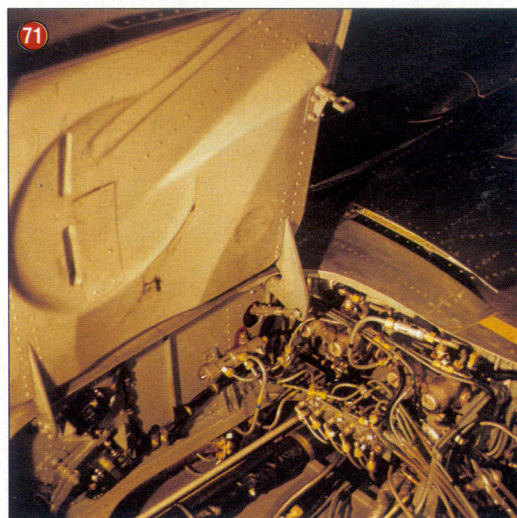
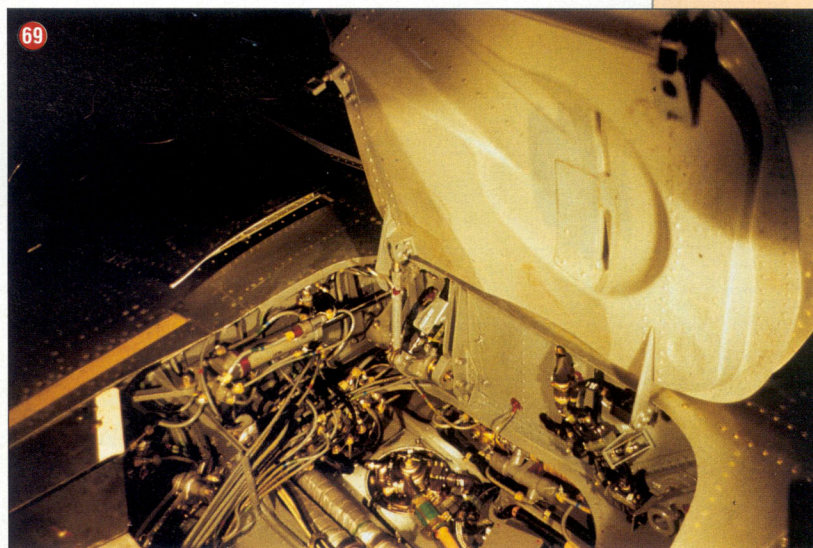
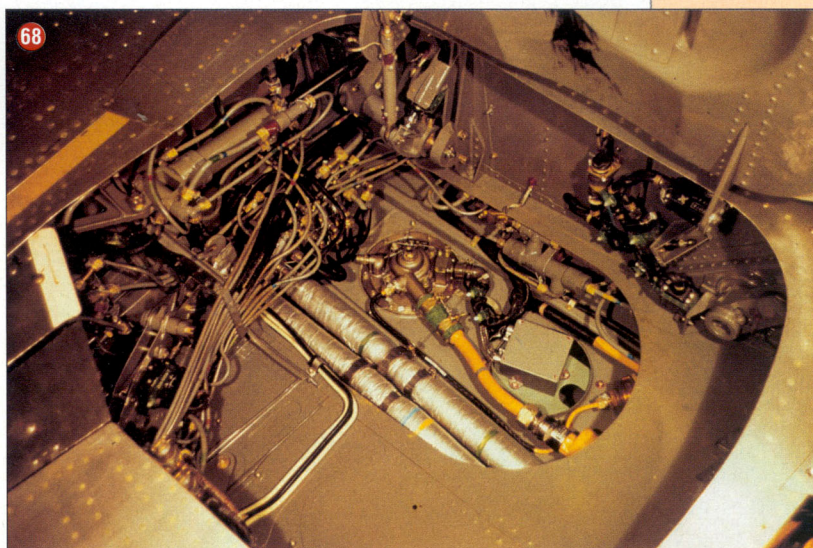
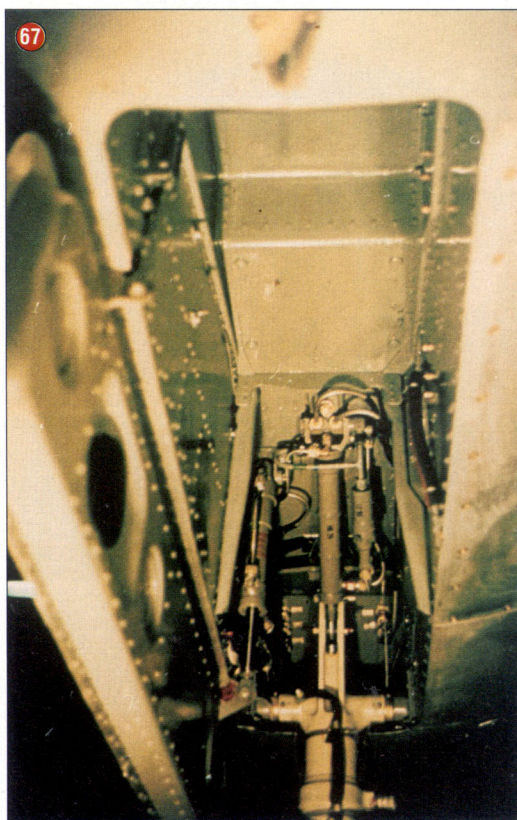


65. Overall view of the nose oleo

66. This shot of the nose oleo shows the forward door open

67. A look into the nose well

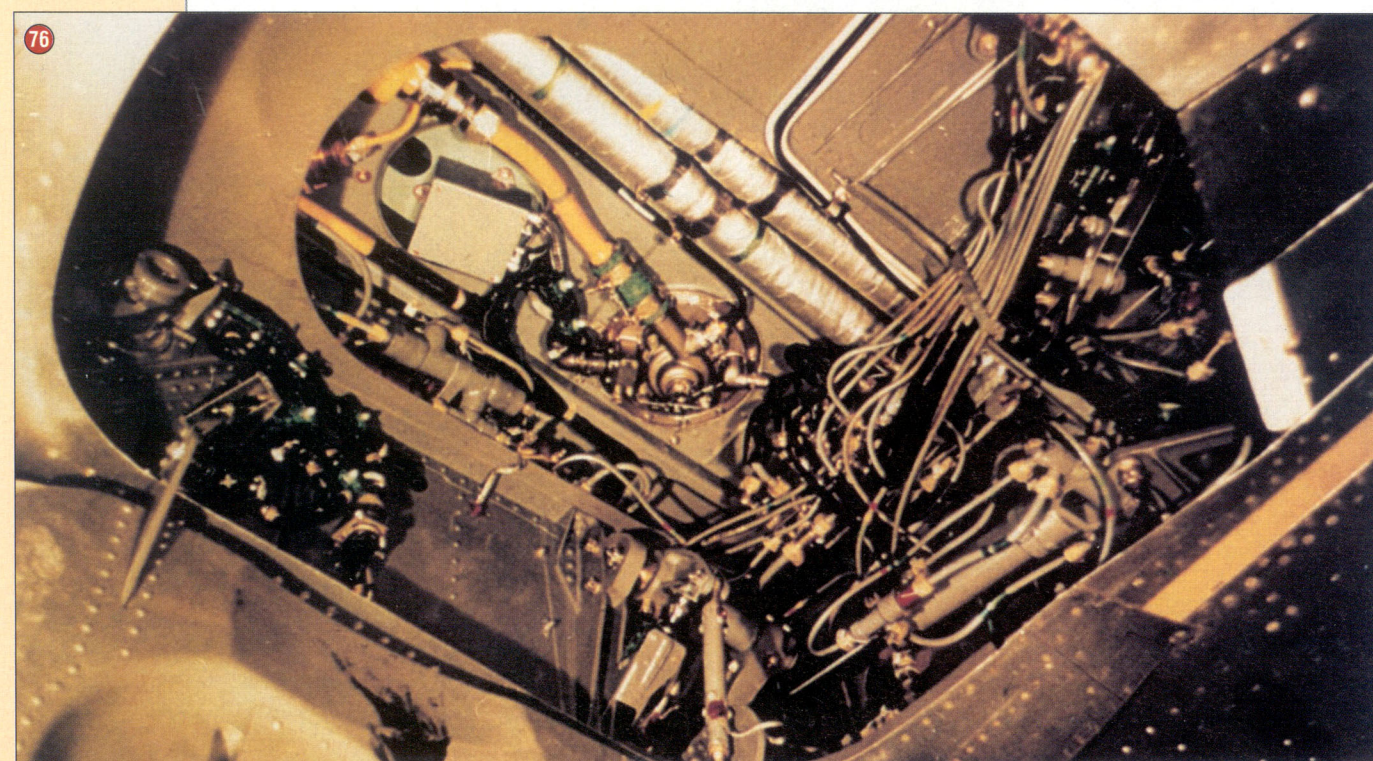
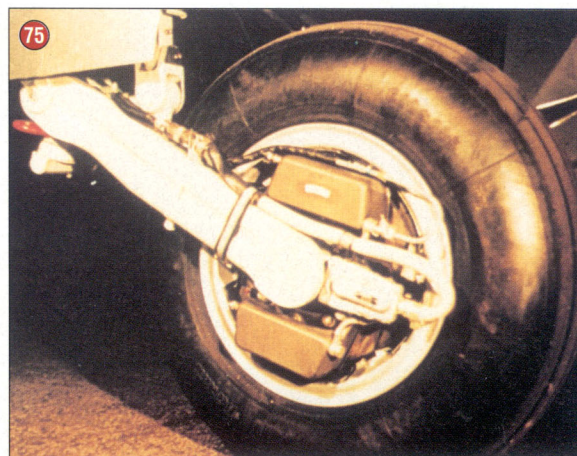
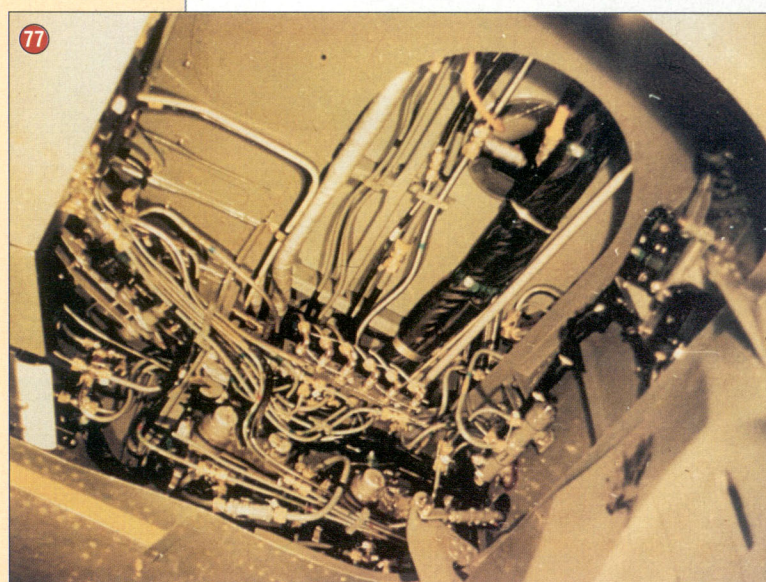
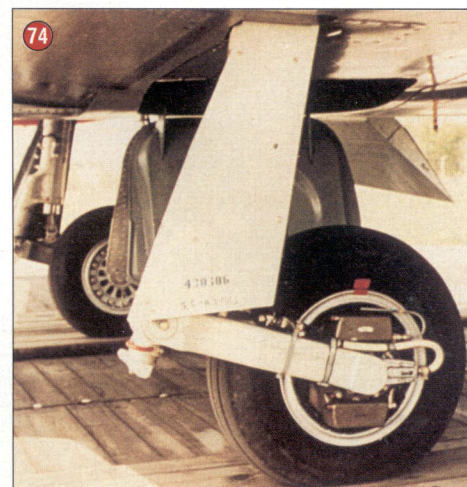
68-71. Views of the main undercarriage bays



72-74. The main undercarriage legs and doors

75. This shot of the back of the main wheel with the gear door removed shows the brake units

76 & 77. Two more shots of the main undercarriage bays



The crew access steps in the port fuselage side



Aero L-39 Customers

Customers	Total Quantity of Aircraft	Notes	Total in Service
Iraq	58	+ 22 L-39C	80
East Germany	52	+ 2 L-39V	54
Libya	180		180
Syria	55	+ 44 L-39ZA	99

Notes:

Ex-East German aircraft of the 11th series were sold to Hungary
Some Libyan aircraft sold to Egypt, Ghana etc.



Aero L-39Z0 Production

Serial Number	Customer	Production Date	Quantity	Note
630801 - 630828	Iraq	1976	28	*
731001 - 731006	East Germany	1977		
731008 - 731022	East Germany	1977	21	Total for two batches
731007	Iraq	1977	1	
831114 - 831140	East Germany	1978	27	
831201 - 831236	Libya	1978	36	#
931414 - 931450	Libya	1979	37	
031706 - 031724	Syria	1980	19	
031726 - 031729	Syria	1980	4	
031731 - 031734	Syria	1980	4	
031736 - 031739	Syria	1980	4	
031741 - 031750	Syria	1980	10	
131937 - 131944	Libya	1981	8	
131945 - 131950	Syria	1981	6	
132001 - 132010	Iraq	1981	10	
132101 - 132113	Libya	1981	13	
232210 - 232217	Syria	1982	8	
232243 - 232250	Libya	1982	8	
232301 - 232340	East Germany	1982	4	
232305 - 232340	Libya	1982	36	
332525 - 332550	Libya	1983	26	
332602 - 332618	Libya	1983	17	
433101 - 433110	Iraq	1984	10	
533601 - 533610	Iraq	1984	10	

Total Production 347

Notes:

* Aircraft S/No. 630820 (Crew: Smidt/David) crashed during delivery flight, 28/1/77

Aircraft S/No.831233 (Crew: Horoicko/Hruby) crashed during delivery flight, 23/9/78

Four main variants of the L-39 are known to have been produced and these are:

1. L-39C/MS – The basic training variant used for both elementary and advanced flying training.
2. L-39Z/ZA – A dual role aircraft that as well as carrying out training is capable of flying light attack missions. This has been the main export version.
3. L-390 – A single-seat variant used purely as a light attack version. This would be a similar aircraft to the Hawk 200 series. I must admit to never having seen a photograph of this version.
4. L-39V – Target Tug modification. During the 1970s the L-39 became the main advanced trainer for the Warsaw Pact Air Forces and was sold in ever-increasing numbers to nations that leaned towards the Soviet Bloc for their weaponry.

Initially the L-39s were left in Natural Metal finished with wing tips painted Red but the aircraft were later camouflaged. The camouflage schemes were varied also with many being finished in a desert style scheme of Sand and Green but others were finished in the darker shades often seen on types such as the MiG-23 and Su-22. The target tugs have been seen in White schemes with possibly Red trim.

The L-39 has proved to be the best selling trainer in the world, up to now serving with 17 air forces. It is not known if the L-39 has ever seen combat but if it has it must surely have been with the Iraqi Air Force either during the Iran/Iraq War or as part of the invading forces that entered Kuwait during 1990. Iraq operated 20 L-39Zs but it seems doubtful that this number exists after the Gulf War.

As the aircraft has now become a fairly regular visitor to the larger shows the modeller can now gain a closer look to enable him to produce a much better model. **MAM**



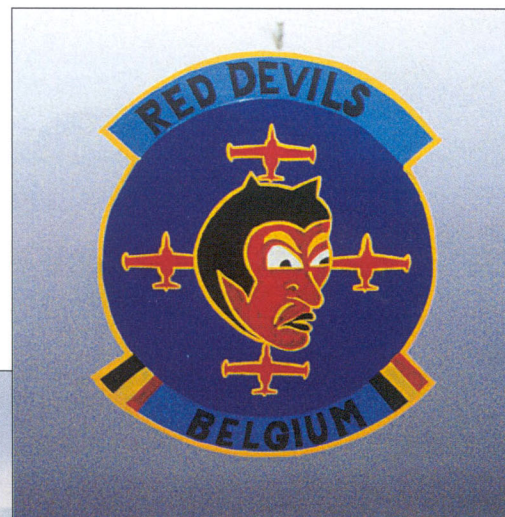
Overall shot of MT30, showing the overall special livery

Colourful Birds

SPECIAL SCHEMES NO.1

by W. Hendrickx

The subject of this feature is the Fouga Magister, 'MT30' that had a special livery applied to mark the 30th anniversary of the Belgium Air Force's use of the type. This machine was flown by Commandant Hedeboom.



'Red Devils' badge on the starboard fuselage side



Close-up look at the starboard side of the nose



1. The forward badge on the starboard fuselage side

2. MT30 viewed from the front

3. Commandant Hedebouw getting ready to undertake a flight in MT30

4. Overall view of the port fuselage side



5. Another overall view of MT30

6. The rear fuselage, showing the special markings and '30 Years' legend. Note the F-16 in the background





Österreichische Luftstreitkräfte

By Robert Day

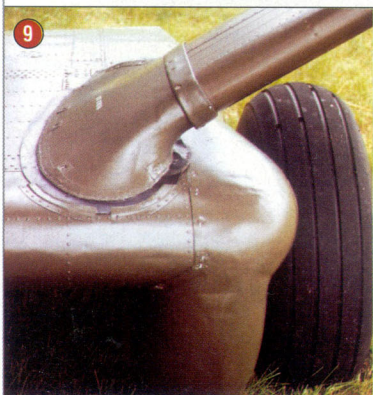
(AUSTRIAN AIR FORCE) OPEN DAY,
TULLN-LANGENLEBARN AB, 9TH JUNE 2001



1 to 6. Saab 350 Draken – this was the first Draken to be delivered to the ÖLk, and is now serving as an instructional airframe; its rather high attitude on the ground is explained by the fact that there's no engine in it! Members of the public could climb up to the cockpit, look at (and sit in) the cockpit, then walk back along the wing (protected by the blue arrestor barrier visible in Photo 1), and slide down the drooped flap onto the foam mattress visible in Photo 2!



7 to 9. Shorts Skyvan of 4 Flächenstaffel, based at Tulln, one of two flown by the ÖLK. A leased Casa-Nuritano CN.235 is currently being evaluated with a view to providing a suitable replacement type



10 to 13. Pilatus PC.6 Turbo-Porter, also with 4 Flächenstaffel at Tulln. 3G-EG is stripped down for maintenance, with the engine removed and locks on all flying surfaces

14 & 15. Turbo-Porter 3G EL is finished in a special scheme for the previous year's show, 'Airpower 2000'. Known as 'Der Bunte Fredi' (Colourful Freddie), the scheme is the subject of a special kit available from IPMS Austria*





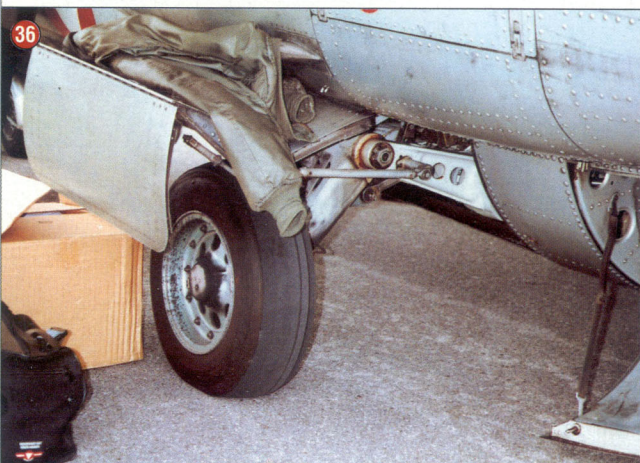
16 & 17. Bell OH-58B Kiowa of 3 Staffel, Hubschraubergeschwader I, based at Tulln

18 to 23. Sud-Aviation SA.316B Alouette III (c/n 2099) of Hubschraubergeschwader II, used for mountain rescue duties. Note the winch over the port door (Photos 22 & 23)



24 to 33. Mil Mi-8T (NATO reporting name Hip-C) of the Hungarian Air Force. Note the array of clutter carried inside the clamshell doors (Photos 26 & 27), including a bucket and broom! The interior view (Photo 28) shows the hoist and trapdoor for carrying suspended loads. Photo 30 shows to advantage the port side podded fuel tank, the pylons for external weapons loads, and the tyre creep marks. Photo 32 shows the

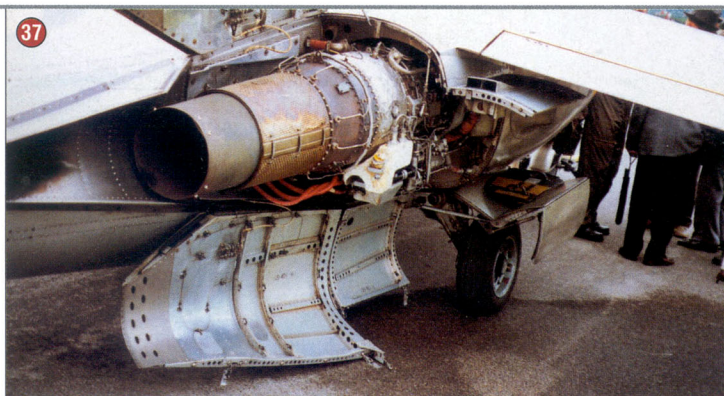




antenna fit along the tail boom, as well as showing the amount of wear on the national insignia and reporting number

34 to 42. Saab 105Ö of 1 Staffel, Jagdbombergeschwader, based at Linz-Horsching. (Apologies for the promotional T-shirt!) Photo 42 shows that there is much more to an ejection seat than we can begin to imagine!

43. A Kiowa on a Kiowa – this year's Ölk display aircraft is OH-58B 3C-OK



* Kit is based on the Classic Plane short-run kit, plus a decal sheet designed by Rainer Selisko and especially prepared for IPMS Austria. Price ASch.349 (ASch. 280 to IPMS members). Enquiries to IPMS Austria, c/o Ing. Peter Havel, A-1140 Wien, Märzstraße 127/46, Austria. E-mail: rainer.selisko@gmx.at (Exchange rate at time of writing was better than ASch.20 = £1!)

